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MARCH

Firestone

WHEEL CHANGEOVER PLAN



... Brings You the
**Time and Money-Saving Advantages
of Firestone Ground Grip Tires
Quickly and at Low Cost**

PLOWING TIME is here again — and that means the start of a new farm year. Farmers everywhere are planning their spring work, selecting new equipment, deciding on ways and means of reducing operating costs. NOW is the time to buy a new tractor — and when you place your order, be sure to tell your implement dealer that you want it delivered on Firestone Ground Grip Tires. Or, if your present tractor is still in good condition, you can save 25% in time and up to 33½% in fuel and increase its trade-in value by equipping it with Firestone Ground Grip Tires.

Firestone engineers developed and perfected the quick and economical changeover plan by which your dealer can cut down the steel wheels of your tractor or any wheeled farm implement and weld on to your old spokes and hubs the correct rims for a set of new Firestone Ground Grip Tires. This changeover can be made so quickly that your farm work is not delayed.

By acting NOW, you can take full advantage of the savings in time, work and money which *only* Firestone Ground Grip Tires provide. And you can actually see for yourself the time and money-saving advantages of Firestone Ground Grip Tires right on your own farm, with your own tractor, under your own operating conditions, by means of the Firestone Free Demonstration Plan.

You can buy Firestone Ground Grip Tires on easy terms to suit your individual requirements through the Firestone Special Farm Payment Plan. In that way, the savings you make help pay for your tires. Call on your nearby Implement Dealer, Firestone Tire Dealer, or Firestone Auto Supply and Service Store — or mail in the coupon today — and find out how little it costs to put your farm on rubber.

Listen to The Voice of Firestone with Richard Crooks, Margaret Speaks and Alfred Wallenstein, Monday evenings over Nationwide N. B. C. Red Network.

Listen to The Firestone Voice of the Farm — Everett Mitchell interviews a Champion Farmer each week during noon hour. See local paper for station and time.

Only Firestone Ground Grip Tires Have These Exclusive Advantages:

Triple-Braced Traction Bars, which cannot bend, break or tear off.
Longer Tire Life, because of the patented Firestone Gum-Dipping process.
Tread Guaranteed Not to Loosen, because of extra layers of Gum-Dipped cords under tread.

Scientifically-Spaced Traction Bars provide better cleaning.
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32% Greater Tread Bar Surface Contact assures increased pulling power.
21% Flatter Triple-Braced Tread provides shoulder traction.



Firestone CONVOY TIRES FOR CARS, TRUCKS AND SCHOOL BUSES



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Make and model of tractor.....

Please demonstrate on.....

(date)

Name.....

R. F. D. or Street Number.....

Town..... County..... State..... (C)

FIRESTONE PUT THE FARM ON RUBBER

SOMEWHERE, SOME DAY... YOU MAY HAVE A DATE WITH A *Blowout!*

**Will you wait until it happens . . . or change
to a Hudson in time?**

WHEN sudden injury threatens . . . will it be too late to wish you had changed to a Hudson?

For Hudson, you know, is the *only* car with Auto-Poise Control . . . the automobile safety invention that helps to keep wheels on their true course *automatically*.

Or, if your hydraulic brakes should suddenly fail, as they may at any moment through accident or service neglect, you just do the natural thing in a Hudson . . . *push farther down on the same foot pedal . . . and STOP!*

Don't wait another day to investigate *all* you get in the new Hudsons for 1939. See the beautiful new Salon Interiors.

Try Hudson's new mechanical Handy Shift, up at the steering wheel. See the new Dash-Locking Safety Hood (exclusive)—locks from a lever inside the car, battery and engine parts theft-proof. See and drive a new Hudson *soon*.

NEW HUDSON 112 UTILITY COACH

Two Cars for the Price of ONE



SATURDAY



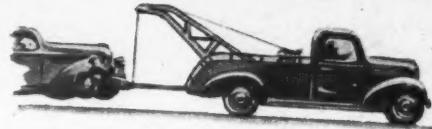
SUNDAY

Hudson's Weather-Master Fresh Air and Heat Control Available in all Models

HUDSON

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Car illustrated is new Hudson 112 De Luxe Touring Sedan, \$806, delivered in Detroit, equipped to drive; including Federal taxes, not including state and local taxes, if any.



This Car Had Everything Except **HUDSON SAFETY!**

You've seen scores like it. A car with style, roominess, good performance, luxurious fittings . . . yet turned into a mass of junk in a split second because a tire blew out or brakes failed! Because in a vital emergency its driver was left wholly "on his own" with no dependable mechanical watchdogs to help ward off disaster—such as Auto-Poise Control and Double-Safe Brakes, which are described below. Something to think about? We believe so. Something to do something about? See your nearest Hudson dealer.

IF A FRONT TIRE AND TUBE BLEW OUT AT 60!

*You'd Be Safer with Hudson's
Exclusive Auto-Poise Control*

WHY? Because this revolutionary mechanical invention automatically helps to keep wheels straight on their course—on rough roads, in heavy side winds, even when a tire blows. The operation of Auto-Poise Control does not require special tires, tubes or extra equipment of any kind. *No other car has anything like it.*

IF HYDRAULIC BRAKES SHOULD FAIL!

*You'd Be Safer with Hudson's
Exclusive Double-Safe Brakes*

Only Hudson gives you *two* braking systems (finest Bendix Hydraulics and a reserve mechanical system) working automatically from the same foot pedal. Many letters in our files tell of lives saved by Double-Safe Brakes.

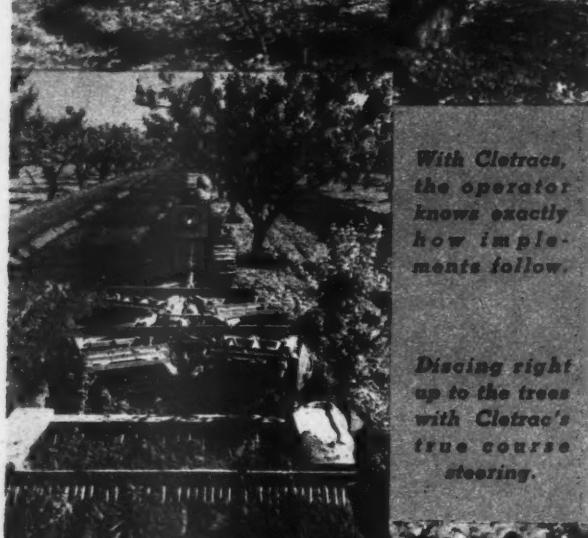
NOW! A DE LUXE HUDSON 112 PRICED DOWN WITH DE LUXE MODELS OF THE "OTHER THREE"

\$745

and up for 86 H. P. Hudson 112 De Luxe; \$823
and up for Hudson Six—96 H. P., 118-in. W. B.;
\$919 and up for Country Club models—101 and
122 H. P., 122 and 129-in. W. B.

Prices delivered in Detroit, equipped to drive; including Federal taxes, not including state and local taxes, if any. For delivered prices in your locality see your Hudson dealer. Attractively low time payment terms, with new Hudson-C. I. T. Plan. Prices subject to change without notice.

BEFORE YOU BUY YOUR NEW TRACTOR



With Cletrac,
the operator
knows exactly
how imple-
ments follow.

Discing right
up to the trees
with Cletrac's
true course
steering.



Choose a size that suits your orchard best
Whatever your orchard operations
Cletrac builds a size of tractor suitable
for the largest or the smallest, in
gasoline or Diesel power.

SEE CLETRAC CHECK CLETRAC FEATURES ASK CLETRAC OWNERS

CLETRAC is a remarkable tractor—a tractor that deserves your careful study before you can realize the tremendous advantages it offers the fruit grower. Throughout the fruit country Cletrac owners say: "My Cletrac is cutting costs"—"Cletrac does my orchard work faster—easier—better—and on time"—"I'm making more money since I bought a Cletrac."

There's genuine enthusiasm in such statements—for Cletrac has features *all* of which are not found in any other tractor. *Controlled Differential Steering* for example, is exclusive to Cletrac. It's a feature that keeps both tracks *always pulling*—highly important when an operator must get close around trees.

The ground pressure of a Cletrac is less than that of a man walking—there's no soil packing when a Cletrac goes over the ground.

Cletrac's extraordinary *traction* and ample power never even pause at ground conditions that would mire an ordinary tractor. Cletrac is worth its cost alone in its ability to do *timely* spraying and pull heavy spray equipment in spite of soil conditions.

Cletrac is fully streamlined; may be equipped with fenders—there's nothing to injure low hanging blossoms or fruit.

See your nearest Cletrac dealer. Ask for a Cletrac demonstration in your own orchard. Learn first hand why thousands of orchardists rely exclusively on Cletrac.

THE CLEVELAND TRACTOR CO. • CLEVELAND, OHIO

22-95

Cletrac

Crawler Tractors
Built To Endure

horsepower

STOP FEEDING INSECTS

Your Profits!



PROTECT FRUIT WITH GRASSELLI SPRAY PRODUCTS

IT'S THE WISE grower who plans his spray schedule early. Proper crop protection may mean the difference between profit and loss by avoiding unnecessary costs through degrading and reduced yields.

Lead Arsenate, a major insecticide of wide application, is supplied by Du Pont in two grades. GRASSELLI Lead Arsenate is a heavy type lead compatible with summer oils and recommended for use where heavy deposits are desirable. NuREXFORM Lead Arsenate is a spreader type lead compatible with lime sulfur and has excellent suspension qualities. Both products are high in killing power and low in water soluble arsenic providing an additional safety factor to avoid injuring foliage.

GRASSELLI Spray Products offer the best crop protection that Du Pont research and manufacturing facilities can provide.

See your nearest dealer for this complete line of GRASSELLI Products. Informative folders are available on request.

Grasselli
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SPRAY PRODUCTS

- *Grasselli Lead Arsenate
- *Sulforon Wettable Sulfur
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- *Grasselli Oils
- *Dutox Barium Fluosilicate
- *Alorco Cryolite
- *Loro Contact Insecticide
- Paris Green
- *Fluxit Spreader
- *NuRexform Lead Arsenate
- *Lime Sulfur Dry & Liquid
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*Trade Marks



Wife washing dishes by "lamplight"?



Get a new tractor...on Goodyears!

If you had a new tractor on fast-rolling, smooth-riding Goodyear Sure-Grip tires you wouldn't always have to stick in the field till the last minute of daylight.

You'd be able to work four acres in the time you now take to do three with that old steel-wheeled job. You could knock off in time to get your chores done by a decent hour.

Your wife would like that too, because she then wouldn't have a dog-tired husband dragging in for a late supper every night.

And you'd save hard cash as well as hard work and time. You'd cut your fuel bills by as much as one-fourth. You'd pocket a big slice of the money you now spend every season for tractor repairs.

So, it's easy to see why many farm-

ers figure that Goodyear Sure-Grip tractor tires soon pay for themselves!

No other tractor tire has an open-center bar tread like the Goodyear Sure-Grip. It gives you better grip because there are no pockets to pack up and cause slip.

And notice the angling of those tough, deep-biting bars. The weight rolls from one bar to the next, with continuous support—no bumping—you ride smoothly even on hard-surfaced roads.

The man who can tell you exactly how you can afford a new tractor on Goodyears is—your implement dealer. Why not get in touch with him right away?



TUNE IN!—Goodyear Farm Radio News
NBC Blue Network, 1:15 P.M., E.S.T.—12:15
P.M., C.S.T. Daily, Monday through Friday.

THE GREATEST NAME

IN RUBBER

GOOD YEAR

TRACTOR AND IMPLEMENT TIRES

AMERICAN FRUIT GROWER

Nationwide News

In three Florida cities, bakers are producing grapefruit bread. Others are becoming interested in this new food and citrus interests are urging the use of posters and other means of informing the consumers that grapefruit bread is being served in restaurants and is available for home consumption. Bakers are constantly improving the grapefruit bread. Their formulas call for the use of two ounces of grapefruit juice to each pound loaf.

▼ ▼ ▼

This year's strawberry acreage for picking is estimated by the U.S.D.A. to be eight per cent greater than the picking acreage of last season. Bulk of this increase is centered in the late picking areas. In those sections where strawberries are harvested early, the acreage is about the same as that picked during the 1938 season. Indicated 1939 total of land in strawberries for picking is 194,750 acres as compared to 179,990 acres in 1938 and the 1928-37 average of 180,430 acres.

▼ ▼ ▼

From J. E. Klahre, manager of Pacific Northwest Fruits, Inc., comes a proposal to direct more apple advertising toward children. He bases his recommendation on a survey made among more than 4000 children by a national magazine. Tabulation of this survey showed that 28.5 per cent of these children named apples as their favorite fruit, 24 per cent selected bananas, and 15 per cent chose oranges.

▼ ▼ ▼

Because the mailing rate on books was placed at one and a half cents per pound last fall, South Dakota Horticultural Society president, H. E. Beebe, maintains that a flat mailing rate for bulbs, plants, and other horticultural items would boost the cause of horticulture throughout the country. He recommends two cents per pound as a possible rate, with a set limit on total weight.

▼ ▼ ▼

T. A. Merrill, Michigan extension horticulturist, has advised growers to leave a portion of orchard prunings beneath trees where they will serve as a source of food for rabbits and mice.

▼ ▼ ▼

Attention of the agricultural world will be centered on Cleveland, Ohio, from July 28 through August 7 for the Seventh World's Poultry Congress and Exposition.

MARCH, 1939

MARCH
VOL. 59

1939

No. 3

AMERICAN FRUIT GROWER

The
NATIONAL FRUIT MAGAZINE

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AMERICAN FRUIT GROWER

Published Monthly by

AMERICAN FRUIT GROWER PUBLISHING CO.
1370 Ontario St., Cleveland, O.

E. G. K. MEISTER
Publisher

DEAN HALLIDAY DR. J. H. GOURLEY
Managing Editor Associate Editor
E. A. KRAUSE WILLIAM H. ZIFF
Associate Editor Field Editor
T. J. TALBERT MARY LEE ADAMS
Contributing Editor Home Economics Editor

BRANCH OFFICES

and Representatives

NEW YORK CITY, Room 1212, 30 Rockefeller Plaza,
Phone—Circle 7-1863.
ROGER FISON, Eastern Manager.

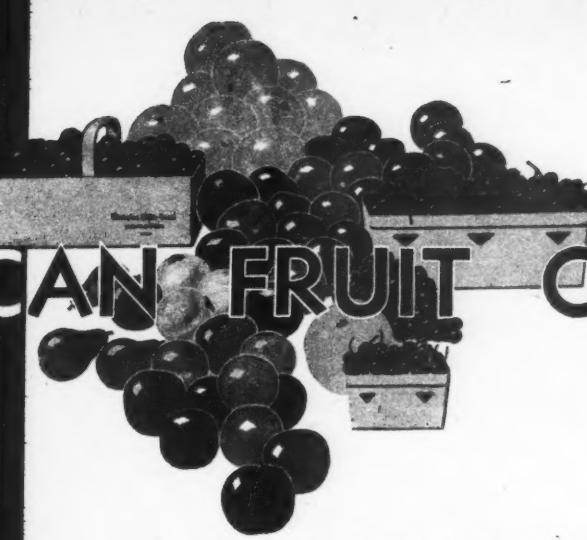
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Cleveland, Ohio, under the Act of March 3, 1879.
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FRUIT BREEDING MARCHES ON

THE real goal of the fruit breeder is to produce superior varieties. True, he is interested in principles and laws of inheritance as guides to a more intelligent procedure, but the latter alone are not his objectives. Since Knight began his breeding work at the turn of the last century until the present time, the fruit breeder has worked somewhat in the dark. As Carlyle said of Burns, "He had his very materials to discover; for the metal he worked in lay hid under the desert, where no eye but his had guessed its existence; and we may almost say that with his own hand he had to construct the tools for fashioning it." So quite literally with the breeder.

Writing only eighteen years ago it was stated that "In a study of the vast number of fruit varieties now grown in America, the fortuitous nature of their origin is impressive. The larger part of the varieties of apples planted in this country originated here, but the history of many is obscure and only a very few came into existence as the result of direct breeding." The same was true of the other fruits. Prof. W. H. Alderman now points out that by 1937 the experiment stations had introduced 541 varieties of fruits and there are 200 more from Canada. What progress in 15 years! Only about 50 of these have made a place for themselves in the commercial fruit industry or show marked promise of coming importance. Still, that is progress, and to wait for laws of inheritance before beginning the task would have been asinine. For fuller information the reader should consult the 1937 Yearbook of Agriculture which is the most complete compendium on this subject yet prepared.

Better fruits are needed; later blooming ones; disease and insect-free ones; those that are of hardier, higher quality, of better appearance, and that are of greater value to the health of the nation. What a program! We must either sort over the discarded ones for something worth while, or breed new ones. The possibilities from breeding are almost unlimited. So great are the details involved, so great the expense and land required for growing the thousands of seedlings, that it becomes a national rather than a state problem. The Bureau of Plant Industry of the U. S. D. A. called a Washington conference of workers in various states early in March to the end that the program of fruit breeding will be correlated and the greatest economy of time and effort effected. No individual or state loses by such a move and much is to be gained.

In casting over the newcomers in fruitdom, one cannot escape the mounting list of mutants or "sports" that have come to light. Mostly, these are color sports, such as red strains of Delicious, Rome Beauty, Stayman Winesap, and the rest. Yet those of a different nature are also being discovered. Prof. V. R. Gardner of Michigan reports cherries sporting in many directions. Just as greater possibilities exist for wide variation in offspring from fruits with a complex chromosome situation (although more difficult to work with), so there is greater likelihood of mutations with fruits of such constitution. Peaches, for instance, have a simple situation in this regard and hence give immediate results. The same would be true of sweet cherries. Apples, pears, and strawberries become more and more complicated and larger numbers are required to find all the hidden possibilities. The breeder will accept this challenge and set his sails. It is not an extravagant flight of the imagination to say that vastly superior varieties are within our reach and that the future horticulturist will wonder why progress was so slow.

Take Stock of Your Truck Needs

.. Then Call in INTERNATIONAL



The Half-Ton International Model D-2 with pickup body—a handy truck for all-around utility hauling, one that is especially practical for hauling fruit.

There is one line of trucks that meets every hauling requirement and gives you the greatest value per truck dollar!

That's the International line!

Whether you need a light pickup truck for utility work, a larger size with two-speed axle for field work and heavier loads, or a unit for long-distance hauling to market, there is an International to fit the job *exactly*—at the right price!

And as for truck value: One look at an Inter-

national will show you it's a sturdy, rugged truck, built to take a lot of punishment throughout its long life. And when you get into the details, you really begin to appreciate the *quality* of International construction and the money-saving features engineered into these trucks . . . all designed to give owners the best in performance at low operating cost.

Ask the International dealer or Company-owned branch for a demonstration.

INTERNATIONAL HARVESTER COMPANY

(Incorporated)

180 North Michigan Avenue

Chicago, Illinois

INTERNATIONAL TRUCKS



A QUARTER CENTURY OF PEACH BREEDING

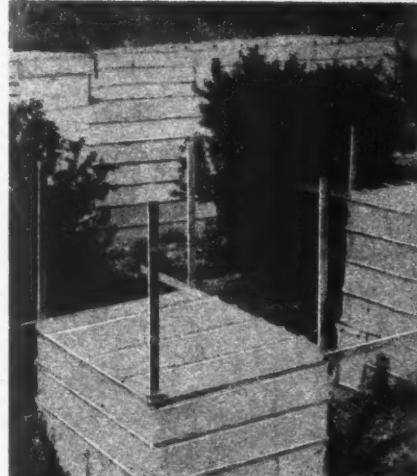
By M. A. BLAKE

New Jersey Experiment Station

AT the beginning of the 20th century, 1901 to 1905, the San Jose scale caused the death of thousands of peach trees in New Jersey and the East. Remedies for the control of this insect were soon found, but the era when fruit of a modern commercial standard could be produced without spraying had passed. It so happened that no satisfactory summer fungicide for peaches had been developed at the beginning of the century. Peaches sent to market were blemished to a considerable degree by peach scab, brown rot, and other pests. These troubles were borne by the growers until Scott of the U.S.D.A. demonstrated the value of self-boiled lime-sulphur as a summer spray about 1908. Dormant season and summer spraying of peaches as a standard procedure, therefore,

(Continued on page 22)

"Marked changes in peach varieties are likely to occur in any district within the next decade," says New Jersey Experiment Station's Chief in Horticulture, M. A. Blake. How the New Jersey researchers have attempted to cope with the need for new peaches over a 25-year period, how intricate hereditary factors are cleverly considered in the breeding of a new variety, are simply and revealingly explained in Blake's discussion starting on this page.



Top—Original tree of famed Golden Jubilee peach, a New Jersey station introduction.

Center—White cheesecloth tents cover trees used for intricate pollination experiments.

Right—Breeding results in hardiness. Peaches at left have healthy growth, others are dead.

PLUMS

PLANTING RESULT

While figuring out their planting plans some nine years ago this spring, stone fruit specialists at the Ohio Experiment Station decided to try peat moss for setting a portion of their plums. As a check, they

California workers found that Damson plums such as those shown below require varying amounts of chilling for good spring bud development, may have poor growth after extremely mild winters.



planted one tree with soil only. Another tree of the same type set along side of it received the recommended amount of dampened peat moss mixed in with the soil as the tree was set.

Meanwhile, the two trees received identical care, the same as that given all trees in the station experimental plots. By last summer a striking difference in the growth of the two trees was in evidence. While the tree planted in peat moss had enjoyed extra growth all along, the added wood and foliage production as the trees are on the verge of the bearing period is even more apparent.

This is perhaps one of the oldest instances of the use of peat moss for fruit tree planting and is an indication of the results that can be expected when trees are set with peat moss. Specialists advise use of one pail of dampened peat as tree is set.

CHILLING FOR BUDS

Many a grower has pondered the question as to what would happen if mild winters did not provide enough cold to bring trees out of the dormant stage. Familiar to all is the fact that unless fruit and leaf buds are chilled sufficiently they will not start growth in the spring and, if they do get started, their growth is stunted and sparse.

Seeking an answer to this question, researchers at the University of California started, in 1924, and finished year before last, a series of tests and observations on a dozen different deciduous fruits. They found that in nearly all sections of California where deciduous fruit is grown extensively, the amount of winter chilling is too small for buds to open as quickly or as evenly when spring weather begins as is true in sections with longer and colder winters.

But, oddly enough, in northern California this delay is beneficial since it lessens the late spring frost hazard.

In some of the southerly deciduous fruit sections, however, fruit buds and leaf buds that should open in March may not open until May or June, and then only a small percentage of them may start. Most of the flower buds may fail to set fruit, and the shoot and leaf growth on the tree may be so sparse that there is often much injury from summer sunscald and borers.

On the chilling requirements for plums, the California workers say:

"The common plums which came to us through Europe from their native home in western Asia are sometimes called European plums. They include, besides all the prunes, such varieties as Jefferson, Washington, Yellow Egg, Diamond, Pond, and President. The varieties in this group are highly variable in their chilling requirements. Some, such as President, Diamond, and French prune, are at least equal to such peach varieties as Elberta and Paloro in chilling requirements; others, such as Tragedy and Sugar prune, are able to blossom and start growth after any but the warmest winters in southern California."

Plums of the Damson group, they add, are also variable in their chilling needs. It is advised that a Damson tree that does not start well after a warm winter can be top-worked to a strain of Damson that does.

Observation has shown that most varieties of Japanese plums have only moderate chilling requirements.

(Continued on page 28)



Plum trees planted during summer of 1930 in trial plots at the Ohio Experiment Station. Tree at left set with soil alone, tree on right with soil and peat moss. Photo taken late summer, 1938.

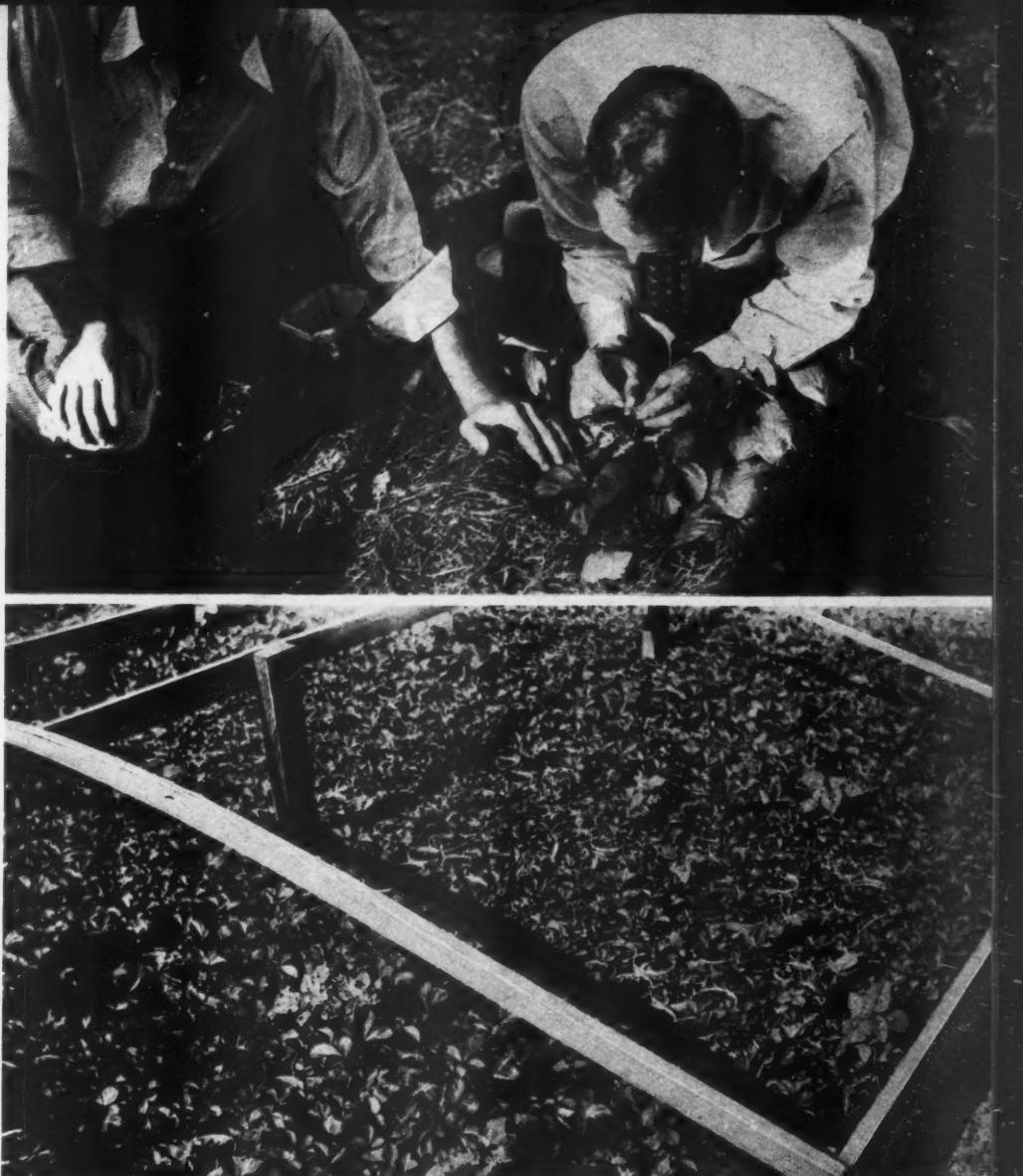
STRAWBERRY BREEDING IN LOUISIANA

By JULIAN C. MILLER

Louisiana Agricultural Experiment Station

THE Hammond area of Louisiana leads all other sections of this country in the production and carlot shipment of strawberries. Annual production is from 2500 to 3000 cars, valued at from \$4,000,000 to \$6,000,000. The Klondike is by far the leading variety for this district. It has been estimated that 95 per cent of all plantings are of this variety. The next variety of any importance is the Missionary, which is planted primarily for very early shipment. No other commercial varieties yet tested seem to be suited to Louisiana conditions.

While the Klondike has many excellent qualities which make it one of the leading American varieties of strawberries, it has at least a few characters that the Louisiana growers would like to see improved. Most important improvements desired are (1) a variety which is sweeter than the Klondike but still retains the shipping qualities and other excellent characters of this standard variety, and (2) a variety which is more resistant to the two major diseases in Louisiana, namely, leaf spot



Above, top—Making strawberry crosses in the field, a delicate, painstaking operation.

Above, center—Strawberry seedlings transplanted to three-inch pots and growing in the cold frame. When leaves of the plants cover pots, they are sprayed with spores of leaf spot and scorch, important diseases.

Above—Fruit of a new seedling that is highly resistant to leaf spot and scorch. Fruit has sweeter flavor than the popular Klondike.

Left—The stake row marks one of the more promising new seedlings. Berries in all stages of growth, from flowers to mature fruit, can be seen in this illustration. Louisiana strawberry breeders are seeking better flavored, pest-resistant strawberries for growers.

(*Mycosphaerella fragariae*) and scorch (*Diplocarpon earlianum*)

After preliminary study, the following methods of handling the breeding materials at Louisiana Agricultural Experiment Station were adopted: All varieties known to have any resistance to either of the above diseases were collected. So far, the following varieties have been used as parental materials: Klondike, Missionary, Aroma, Premier, and Blakemore.

The Blakemore x Klondike cross has given the largest number of promising seedlings. Crosses have also been made with a number of the better seedlings. Crosses are usually made during April and May. The seed are cleaned by fermenting, dried, and placed in cold storage until the following December, when they are removed, planted in flats, and placed in a greenhouse or hotbed for germination. They are allowed to remain in flats until three true leaves develop and are then transplanted to three-inch pots and placed in a cold frame or in an open bed, plunging the pots in the soil to the rim. From 3600 to 4000 seedlings are grown annually. They are allowed to remain there until

(Continued on page 24)



LOOKING PLEASANT

for the CAMERA at the
OHIO SOCIETY MEETING

Below—Relaxing after the busy meeting sessions, C. E. Drumheller, Buena Vista, leads Mrs. Drumheller through intricate steps of a rhythmic fox trot. Drumheller is manager of the Flagg-Buckhorn farms.

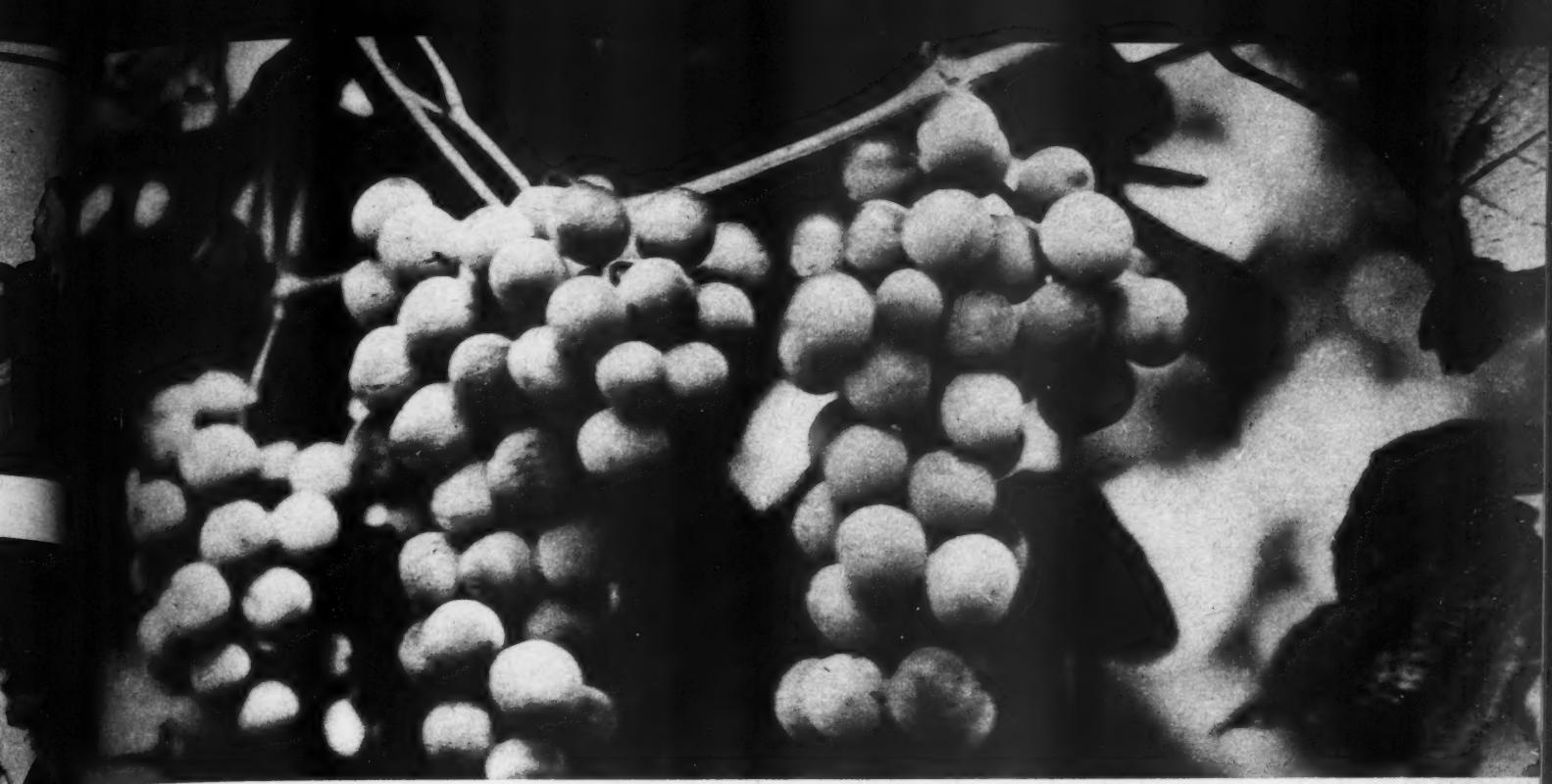


Circle—Business session highlight is reading of treasurer's report by C. W. Ellenwood, holder of this office for several years. Below—1939 president Ralph Varian, East Canton (right), shows his gavel to growers Ben Davis (center) and Ben Enos, both of near Clyde.

Top—Taking a recess from the dance which followed the annual banquet are Mr. and Mrs. H. A. Einhart, Clyde (left), and Mr. and Mrs. W. F. Ryant, Galena. Above—A new and happy member of the Ohio society is Virginia visitor F. P. Downing who cheerfully pays his dues to Cecilia Laufersweiler. Below—Ohio cold storage specialist, Donald Comin, talks about fruit storages with B. Franklin Dietsch, Edgerton.

Below—"Caught" by the cameraman are growers (left to right) W. J. Welday, Smithfield; N. C. Patterson and L. H. Battles, Chesterland; and E. J. Riggs, Gallipolis. Below, center—Conversation runs rampant between life members L. B. Yaple, Chillicothe (left), and M. A. Cecil, North Olmstead. Below, right—Another grower quartet is composed of (left to right) P. E. Muckley, Waynesburg; Earl E. Leeper, Canton; W. P. Shupe, East Canton; and Earl Kitzmiller, Beloit.





Compact, full clusters are a characteristic of the prominent Fredonia grape, a recent origination of viticulturist F. E. Gladwin.

ORIGIN OF GRAPE VARIETIES

By F. E. GLADWIN
New York Experiment Station

THE number of grape varieties, stemming largely from our native species and furthered by the admixture of Vinifera blood, has increased by leaps and bounds during the past century. The East, Midwest, and Southwest have contributed most in the efforts to improve existent sorts. Endeavors to improve American viticulture through the use of the best selections from the many wild vines of different species available have required much time and patience. The grower of Vinifera or Old World varieties has had a comparatively easy time of it, since the varieties he grew from the inception of Vinifera growing, and even today, are brought in from some localities of the Old World. Since these varieties have grown for so many years and under diverse climatic conditions, there has probably been little need of much attention being given to crossing for the production of still more. Even now scarcely a year passes but one or more Vinifera varieties, found in some hitherto unexplored region, are brought to the United States. With this seemingly constant supply from outside sources, the variety question is pretty well cared for.

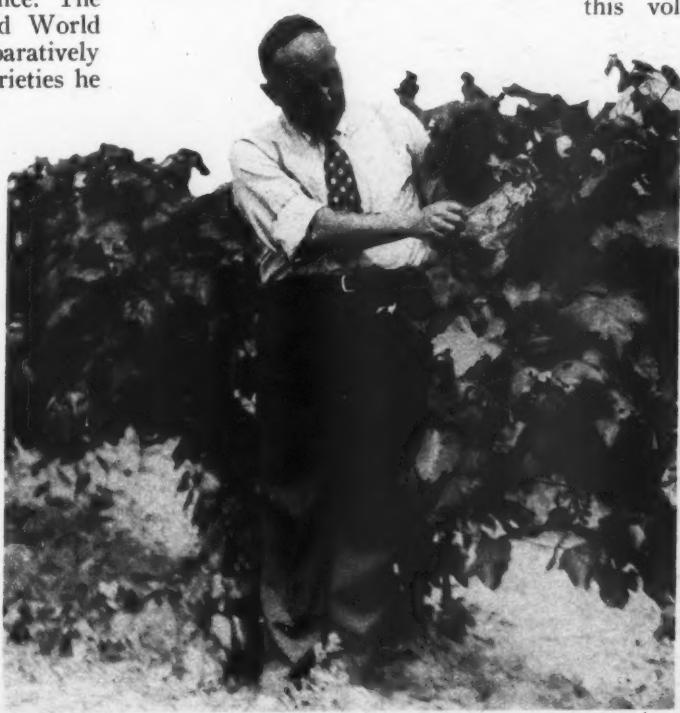
Because so much prominence has been heaped on "sports" of tree fruits, there has been relatively little attention given to the occurrence of these often valuable variations in grapes. In this factual, timely article, famed grape researcher, F. E. Gladwin, tells of those grape "sports" that have received attention in the past and how they were discovered. To find some new, better type is the province of every grape grower. This article is a challenge for all who produce grapes to be on the lookout for "sports" in their own vineyards.

From the beginning of the cultivation of our native grapes, a great many individuals have interested themselves in the development of better sorts. Some have been interested purely from a commercial angle, others have found a rich field for scientific studies, and some have made grapes and grape growing a hobby. "The Grapes of New York," published in 1908 by the New York Agricultural Experiment Station, lists and describes about 1500 named American grape varieties. Earlier publications mention and describe a considerable number of varieties not included in this volume. Those not included

might have been duplications or else they had been found wanting. It is not improbable that to date at least 2000 sorts have been named. Most of this number have since fallen by the wayside.

In spite of so many failing to meet expectations, the efforts expended in their production have not been entirely lost. Several of them have served as stepping stones in bringing some worth-while kinds into existence. Rogers in the East and Munson in the Southwest have

(Continued on page 25)



AMERICAN FRUIT GROWER

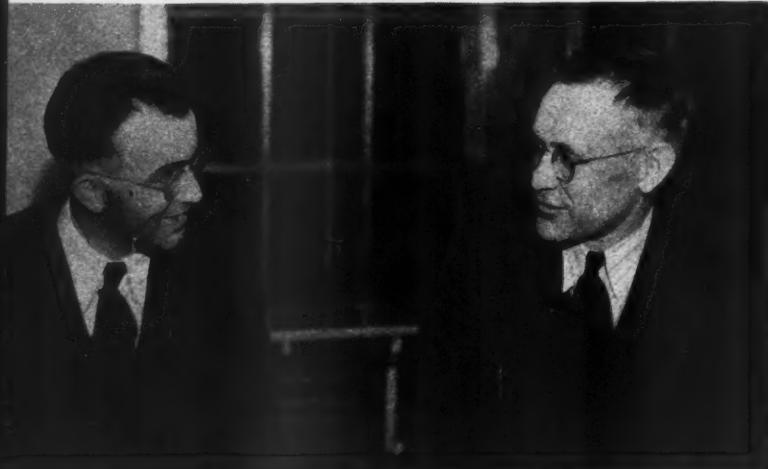
Constantly seeking better color, more compact, pest-free clusters of fruit, F. E. Gladwin shows his method of covering the best looking clusters with Cellophane bags in late summer.

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CAMERA CLOSE-UPS



Picture of a picture man! At the Indiana meeting, grower L. J. Doud, Wabash (right), shows some of his prize photographs to V. V. Clarke, Bristol (center), and W. W. Doud, Denver. Like many another fruit grower, Doud makes a hobby of photography, has excellent prints to show for his work.



During a lull in the busy sessions of the Indiana meeting held in the Horticulture Building on the Purdue University campus at Lafayette, Harley Clark, Mitchell (left), and D. S. Montgomery, Orleans, decided to talk over some of their orchard problems in regular "grower-to-grower" fashion at rear of assembly room.



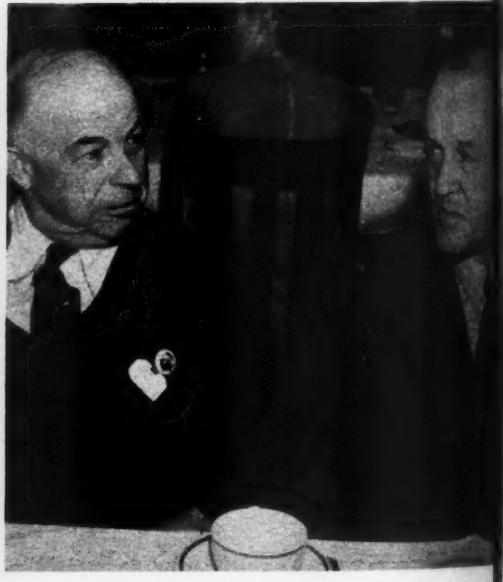
A highlight of the Illinois society meeting is the annual dinner get-together of the Illinois 95% Clean Apple Club when pest-fighting methods are discussed. Enjoying themselves at this year's gathering are, left to right, Clarence Walkington, Tunnel Hill; L. D. Spaulding, Springfield, and his son, Mercer D. Spaulding.



From Calhoun County, Ill., these two growers traveled to Carbondale for the Illinois society sessions. Two of the well-known Ringhausen family of fruit growers, they are Ted (left) and A. J. They were snapped signing up just after arrival.



Looking over Indiana society grading display are (left to right) Mrs. Margaret Romine, S. H. Esarey, and John A. Holden.



National Apple Institute's treasurer and Ohio fruit grower, W. B. Baughman (left), finds an apt listener in L. L. (Les) Anderson, Summer Hill, Ill., during luncheon meeting of the institute which held one-day joint program with Illinois society.

"Black Leaf 40"

FRUIT QUALITY and Orchard Profits should have "Black Leaf 40" protection. To prevent "Culls," Experiment Station authorities recommend "Black Leaf 40" added to:

- **Green Tip or Delayed Dormant sprays, to control Bud-Moth, Rosy Aphis, and Green Aphis, when the first scab sprays start.**
- **Petal-fall sprays, to control Red-Bug and Leafhopper before they damage the fruit or leaves.**
- **Arsenical Cover sprays to control Leaf-hoppers and Leaf-Miners, and to re-enforce the Codling Moth control, especially by killing adult moths.**

"Black Leaf 40" is effective and versatile—it has a long-time record of profitable performance. "Black Leaf 40"—added to standard sprays—helps protect your crop. It does not harm buds or foliage. "Black Leaf 40" is sold by spray material dealers everywhere.

TOBACCO BY-PRODUCTS & CHEMICAL CORP., INCORPORATED
LOUISVILLE, KY.



APS

A PAGE CONDUCTED IN THE
INTERESTS OF THE AMERICAN
POMOLOGICAL SOCIETY

PROPOSE NATIONAL REGISTRATION OF PLANT NAMES AND RECORD SERVICE

DR. M. J. Dorsey, vice-president in charge of nomenclature, and Prof. B. S. Pickett, president of the American Pomological Society, met with the executive committee of the American Nurserymen's Association at the La Salle Hotel in Chicago on January 9 to discuss important problems in nomenclature and to propose a national registration and record service for new varieties in all groups of horticultural plants. Vice-president Dorsey had taken up the matter with Secretary White of the American Nurserymen's Association, finding that organization not only sympathetic with the idea of national registration, but that it was ready to do something about it.

As a result of the discussions at

the Chicago meeting, it was voted to invite representatives of all national horticultural organizations who would probably be concerned with nomenclature matters to attend a general conference in Washington, D. C., the meeting to be arranged by Secretary White of the nurserymen's association.

The location of the central registration office and its financial support were not discussed in detail, but the possibility of making registration an activity of the U.S.D.A. was mentioned as one favorable and satisfactory way to secure the desired service. Strong approval for the idea was expressed unanimously by the executive committee of the American Nurserymen's Association.

FRUIT VARIETY CHATTER AT THE CONVENTION

A GROUP of fruit growers and experiment station workers sat around a collection of new varieties of apples one evening during the convention at Chattanooga. These new varieties were discussed, sampled, and discussed some more.

Cortland, not so new now, was well received on account of its fine color and good quality. The Delicious seedlings were voted a little too mild in flavor except for Orleans. This latter variety seems to be making more friends every year. The fruit sizes up well, is not too well colored, but keeps well and possesses very good quality.

Samples of Iowa-grown Turley made a hit. There were large, full red in color, and firm, crisp, and juicy. Turley does exceedingly well on the loess soils of the Mississippi and Missouri valley regions. Tests clearly indicate that Turley will easily replace Stayman in Iowa and elsewhere where Stayman fails to color well and is beset with stem end cracking. Turley needs immediate cold storage, though, to prevent premature ripening and mealiness.

Secor and Edgewood were bred by the Iowa Agricultural Experiment Station. The cross was Salome x Jonathan. Both varieties are larger than Jonathan, later in season, and free of Jonathan spot. Edgewood is remarkable for its ability to hang to the tree until fully mature. Both varieties are attractive red apples, and of very good quality. They seem well adapted to growing in those regions where Jonathan does well, and trials made on the good apple soils of the Middle West indicate their

usefulness for limited commercial plantings.

Joan, a seedling of the Anisim x Jonathan cross, attracted favorable attention because of its smooth form and fine solid red color, but its quality and short season are against it. Few apples are as productive and none more attractive. In farm orchards it would fill the need for an apple which is easily grown and where good cooking apples are particularly useful.

Peach varieties and peach conditioning for market were most interesting subjects. Dr. M. J. Dorsey of the University of Illinois stated that it was his opinion that if the market was to be expanded for Elberta peaches, growers must market well grown and tree-ripened fruit. Tree-ripened Elberta peaches are of first-rate quality, and when fruits of this variety are picked green and hard, as is now the common practice, they fail to develop sugars and when consumed are found to be of poor quality. No fruit is more pleasing than the tree-ripened peach, yet most of the consuming public has been fed-up on immature, sourish, and sometimes astringent Elbertas. Here is a real challenge to peach growers, shippers, and merchandisers of fresh fruits.

Green cantaloupes at one time threatened to kill the cantaloupe market, but now growers and shippers have found that vine-ripened "cant's" can be marketed successfully and consumption has increased as a result. And so it is with peaches, for several Illinois growers have sold tree-ripened peaches to make extra profits, declared Dorsey.

DELICIOUS LIVES ON

FRUIT growers everywhere who grow the Delicious apple will be interested to know that the original Delicious tree is still in good condition, is thrifty, and bore a big crop of nice apples in 1938. The tree is in an orchard located a few miles from Winterset, Iowa. It has the protection of a special woven wire fence, placed there some years ago by Stark Bro's Nurseries of Louisiana, Mo. The tree dates back to 1872, thereby making a living record of 67 years, and it looks good for a number of years to come.

In 1922 a large, suitably engraved monument was erected in the city park of Winterset to commemorate the origination of this famous apple. The Iowa State Horticultural Society and the historical societies of Iowa and of Madison County co-operated in this enterprise. The late C. I. Lewis, then editor of AMERICAN FRUIT GROWER, delivered the main address at the dedication ceremonies.

Delicious has enjoyed widespread popularity, for it grows in nearly every state in the Union. Few varieties have risen to a position of commercial importance in so short a time. The tree is productive and has few equals in storage if properly stored. Delicious usually tops the market every season.

The discovery of solid red bud sports of Delicious has stimulated the search for bud sports in other varieties of apples and kinds of fruits. Literally hundreds of sports have been "uncovered" as a result of widespread new interest in this phenomenon. Sports of Gravenstein, Rome Beauty, and other varieties had been discovered previously, but these had not aroused a great deal of interest. During the past decade, sports have been found in many deciduous fruits. Some sports in the sour cherry are decidedly advantageous, since size and season of fruit, length of stem, hardness of fruit buds, and fertility of blossoms have been found to vary significantly from the parent variety. Other sports have been observed which, if perpetuated, are a distinct liability. A systematic search and the scientific testing of bud sports has long been advocated by A. D. Shamel of California, in fact, the citrus industry owes much to the science of selection as developed by Shamel and his co-workers.

Delicious has been used in the fruit breeding programs of nearly every experiment station in America engaged in apple breeding. As a parent, it appears to have much to offer. Some excellent new apples have been developed as a result of its use in breeding. Others are on the way. As a parent, Delicious contributes its large size and shape to a fair proportion of its seedlings. Good color, sometimes pure yellow, acid, subacid and sweet flavors, and early as well as late season are also transmitted by Delicious.

1939 MEMBERSHIPS

It is now time to send in your \$1.25 fee for membership in the American Pomological Society. Every member will receive a year's subscription to AMERICAN FRUIT GROWER and a copy of the Proceedings of the annual convention held at Chattanooga. Send remittances to H. L. Lantz, sec'y, Ames, Iowa.

H. L. Lantz
SECRETARY
MARCH, 1939

ORCHARD POLLINATION WITH RENTED BEES

By EUGENE WYBLE

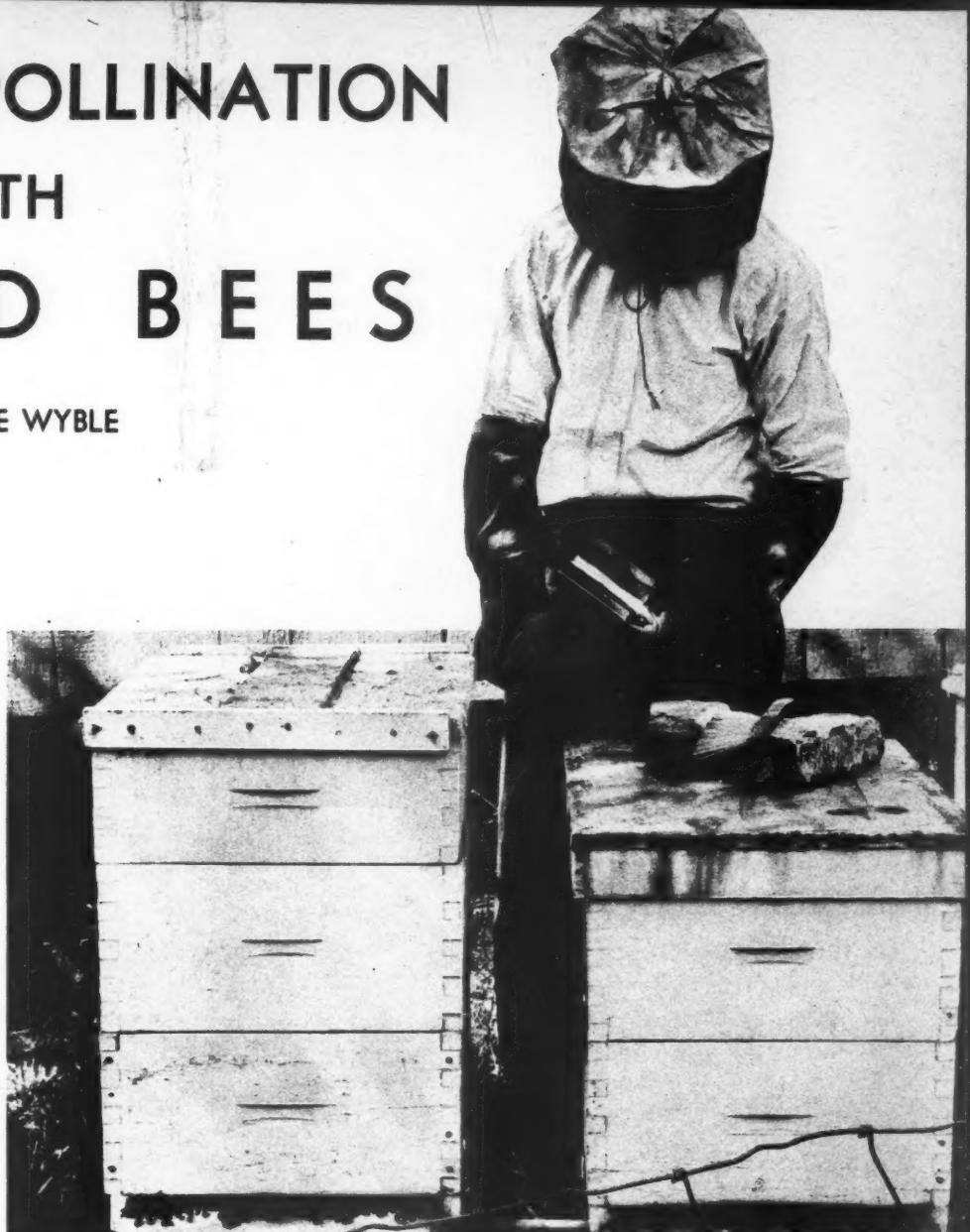
FEW orchardists dispute the value of bees as pollinators to insure a good set of fruit. Indeed, during a cold, wet spring a few strong hives make the difference between a profitable crop and a failure. Just a few short hours of sunshine is all that is needed to send the bees soaring from blossom to blossom as if to make up for the time lost because of bad weather.

Just as the blossoms need the bees to complete their life cycle, so do the bees need the pollen to rear their young. Bees prefer fresh pollen. Though they may have quantities stored up in their combs, they will keep on foraging for more. A bee while gathering pollen visits but one kind of flower. If she first lights on an apple blossom, she will not go to a peach blossom next, but will continue visiting apple blossoms until her load is gathered. An experienced bee-keeper can tell by looking at the bees as they enter the hive just what kind of flower they are working on. Two traits, their fondness for gathering pollen, and the fact that they work on but one kind of fruit at a time, make them first-class fruit pollinators.

Too many orchardists rent bees blindly, without knowing anything of the care the bees in the hive have received. If the bees haven't been given the proper care, they will not be able to give satisfactory service when they are needed most. A strong colony will have a good flight from the hive on days when a weaker colony will not even stir near the entrance. For efficient pollination, the hive must contain the greatest possible number of field bees, sufficient stores of honey and pollen to tide them over a long cloudy period, and ample room in the hive to store pollen and nectar.

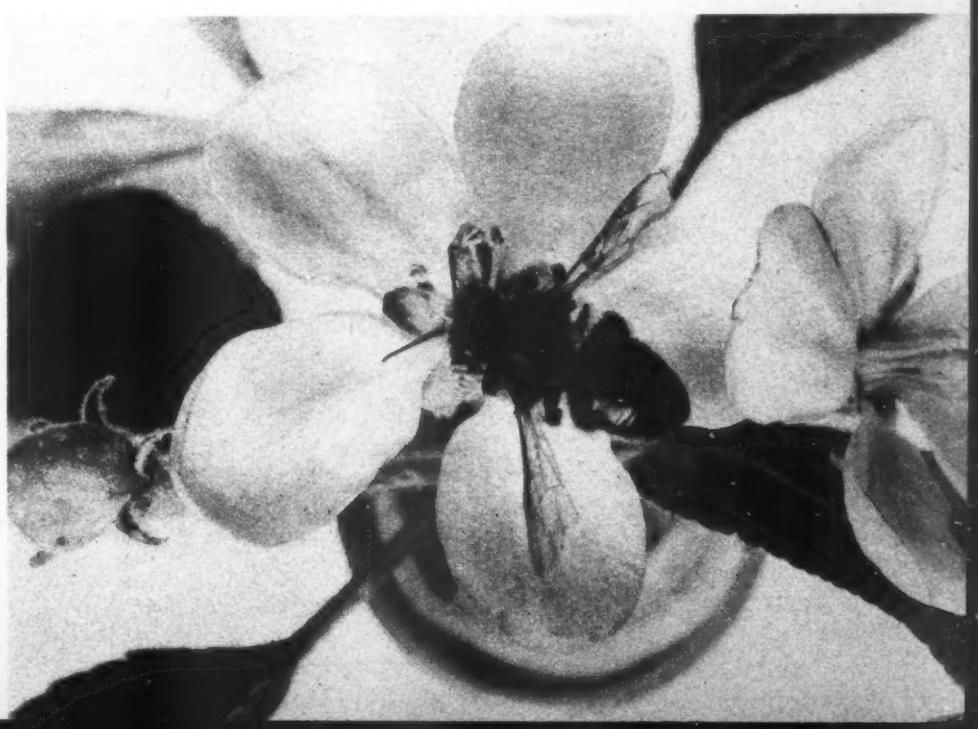
Bees to be rented for orchard use require as much care on the bee-keeper's part as those retained for honey production. Incidentally, in

(Continued on page 32)



Condition of bees in the hives is a guide to their effectiveness for fruit pollination. When inspecting hives, it's best to wear full protection as does the man shown above. Besides protective clothing, working with slow motions and on sunny days prevents stings.

A vigorous bee provides efficient fruit pollination! Its body covered with pollen grains picked up during visits to other flowers, the bee shown in the remarkable photo below leaves some of the grains for pollination of the blossom from which it is extracting nectar.



STATE NEWS

MARYLAND—Vital facts realized by too few growers were revealed by C. L. Burkholder, assistant chief in horticulture, Purdue University, Indiana, in an address before the annual meeting of the State Horticultural Society, when he stated that rapid growth development in apples makes necessary thorough and even frequent early spraying if codling moth is to be controlled.

Measurements at petal fall, according to Burkholder, showed 5340 apples per pound. Seven days later, 605 apples weighed a pound, and nine days after petal fall the apples had sized so that 266 weighed a pound, while two days later 220 apples weighed a pound. On July 19, 10 apples weighed a pound, showing that the fruit grows rapidly, leaving exposed, unsprayed surface for moths to enter.

Pruning to thin out the tree tops, thereby destroying the "pests nests" for scab and moth, was advocated by Burkholder. To reduce sunscald danger in the thinned tree tops, Burkholder used a mixture of lime and skim milk.—A. F. VIERHELLER, Sec'y, College Park.

NORTH CAROLINA—It required 11 years of breeding work on approximately 60,000 seedlings of known parentage to produce the three new strawberry varieties—Fairmore, Daybreak, and Eleanor Roosevelt—recently announced by the North Carolina Experiment Station and briefly described in the February issue of *AMERICAN FRUIT GROWER*.

How these new varieties of fruits were developed and the approved methods for growing them are explained in Experiment Station Bulletin No. 320, "Breeding New Strawberry Varieties," available, free, upon request to the Agricultural Editor, State College, Raleigh.

TENNESSEE—"Love apple juice" is becoming a favorite American drink. Fifty million gallons of canned tomato juice were imbibed in



this country last year! This is more than 70 times as much as used in 1929—a mere 7000 per cent increase for the 10-year period!

Evidently our people like tomato juice, and Alfred Swann believes in giving them what they like. At his roadside market near Dandridge, the bright red bottles of tomato juice set off the sparkling apple juice and the blues and blacks of grape and blackberry juice—all grown and processed on the farm.

Swann's market stand on U. S. Route 70 into the Great Smokies is open the year round. "During the winter and spring months," says Mr. Swann, "the most popular drink is HOT tomato juice. The bottles are placed in warm water and heated just long enough to get the contents piping hot and the juice is served in Coca Cola glasses. Prepared this way, it has the full tangy flavor of ripe tomatoes without the cooked taste of tomato soup. Try it this way at home. You'll be surprised at the difference!"—A. N. PRATT, State Horticulturist, Nashville.

RHODE ISLAND—Carrying their vital message far beyond the geographic confines of their State, the Rhode Island Agricultural Conference broadcast their entire program over station WPRO. The Rhode Island Fruit Growers' Association took part in this pro-

NAI ANNUAL MEETING

All who are interested in apple advertising and promotion, who are concerned with the boosting of apple consumption, are urged by officials to attend the annual meeting of the National Apple Institute to be held at Martinsburg, W. Va., March 17-18. Important subjects slated for discussion by national leaders at the two-day meeting include: Apple Research at the New Eastern Regional Laboratory, Public Health Service Spray Residue Findings, Apple Advertising as Viewed by Professional Advertising Workers, Reports by Regional Groups on Their Apple Promotion Activities, and The Advance of Legislative Action for Apple Advertising.

gram, putting on the air during their annual meeting on February 16 Prof. H. A. Rollins of Connecticut, whose talk covered "The Care of Our Hurricane Damaged Trees."

This new type of program was very favorably received and seems worthy of more general use.

The following were elected to serve in official capacity for the Association during 1939: Sayles B. Steere, Chepachet, president; William Reid, Wallum Lake, vice-president; Enoch M. Steere, Chepachet, executive committee-man for three years.—E. P. CHRISTOPHER, Sec'y, Kingston.

MICHIGAN—With their backs to the wall, placed there by the old bugaboo of overproduction and underconsumption, Michigan cherry growers are taking leaves from the textbooks of citrus fruit and cranberry growers and are starting a national advertising fund to put cherry pies on more American tables.

Michigan's story is the story of every sour cherry producing state. In the days when large scale production was just getting underway and the delicious pie cherry was being snapped up almost as soon as the can rolled off the production line, prices were profitable and the cherry grower rode high. The industry was so profitable that each year the grower set out another block of young trees. So did his neighbor. New orchards appeared on hills that had raised general farm crops for three generations. All this was back in the early 1920's when cherries brought as high as 11 cents per pound. In 1930 the price was six and one-half cents per pound, and in 1931 the growers received their first wallop—one cent a pound. Since then the prices have actually been below production costs with the possible exception of 1935 when the canners paid three cents per pound. National production during the past eight years has been double what it was in the middle of the last decade.

A. J. Rogers, grower and canner, of Beulah, was elected president of an organization of

Michigan cherry growers at a meeting held in Grand Rapids in conjunction with the State Horticultural Society last December, the sole purpose of this group being to work out some salvation for the cherry industry. After reading reports on how the cranberry and citrus fruit growers lifted themselves by their own bootstraps through national advertising campaigns, this type of promotion seemed to offer the salvation.

Right now county committees in the Michigan cherry regions are going from orchard to orchard, signing up the growers to contribute one-eighth of a cent per pound on their tonnage in 1939, and possibly in subsequent years, to be used for advertising pie cherries. When 75 per cent of the Michigan tonnage has been signed up the advertising campaign will start. Arrangements are being made to have the canners collect the one-eighth cent contribution.

"If the cranberry producers can do it, the cherry growers can do it," Mr. Rogers is telling his committees.

UTAH—Creating a state-wide machine for the dissemination of price information and intelligent distribution of fruit was the solution to the Utah growers' problem recommended by John Birmingham, vice-president of the State Horticultural Society, during the society's recent annual meeting.

Here's how such a setup would function: Local co-operatives would each delegate a representative to the State marketing committee which would iron out distribution problems throughout the State for the good of all concerned.

North Ogden Co-operative activities were described by Nathan Barker, and A. P. Spilsbury came 318 miles to tell the 150 members present of the new co-operative setup in Utah's Dixie at Toquerville.—A. STARK, Sec'y, Logan.



MINNESOTA—The Horticulture Short Course at University Farm, St. Paul, will be held March 29-31. Fruit program starts on the 30th with an afternoon program devoted to berry marketing. A general program on fruits continues all day March 31. Last year 408 persons attended this short course. There is no registration fee.

Among the interesting research projects being conducted at University Farm is one concerning the effect of a covering of ice on strawberry plants. This project is in charge of Dr. W. G. Brierley and W. H. Landon of the university staff.

Last year potted strawberry plants were completely sealed in ice for periods of one to 10 weeks. About 90 per cent of these plants survived this treatment on being thawed and removed to growing temperatures. It seemed to make no difference whether the plants were frozen for one week or for 10 weeks.

Similar tests being repeated this winter give similar results, indicating that ice itself does not cause injury. The assumption is that damage in the field usually attributed to ice or to smothering is more likely due to the effect of low temperature because ice provides little insulation against cold in sub-zero weather.—J. D. WINTER, Sec'y, Mound.

*Watch for
JUNE DIRECTORY
Issue*

NEW JERSEY—Anxious to protect New Jersey's peach crop, which averages approximately 1,500,000 bushels annually and is now staging a comeback through orchard replanting with new and improved types developed at the State Experiment Station, the State Board of Agriculture has adopted embargo rulings designed to prevent entry into the State of the insidious mystery disease known only as "X". Peach and chokecherry trees in Connecticut, Massachusetts, Rhode Island, and New York have already been found infected with the disease.

A quarantine proclamation of the New Jersey board (on January 17) prohibits importation into New Jersey from infected areas of all budwood, scions, and other parts of all varieties of peach trees, including flowering forms, and all plants and parts of the chokecherry. Shipments from other than the infected areas must be plainly marked with their point of origin before New Jersey entry will be permitted.

Co-operating in the effort to eradicate and prevent entrance into the State of the "X" disease are the State Experiment Station and organizations of peach growers.

WARNING !!

Swindlers and underhanded confidence men have recently appeared who have tricked many a dollar from the unsuspecting fruit grower. These operators, who at this very moment may be studying your establishment, pose as representatives for canning plants. Their game is to contract to operate orchards, the "operator" to pay for all sprays (with exception of the initial spray), trimming of trees, and hauling of fruit, with one-third of the crop going to so-called "operator" and payment to be made the orchard owner for the remaining two-thirds. After collecting for the first spray, the "operator" disappears. Growers are cautioned to make thorough investigation before entering into contracts with any strangers.

OHIO—The program of the Upper Ohio Valley Horticultural Institute to be held at Steubenville, March 7 and 8, promises to be chock-full of information for fruit growers.

Subjects to be covered include small fruit forum, orchard management, hardy rootstocks, pruning methods, state and local barriers to interstate commerce, packaging, consumer education, care of the sprayer, and some new things in horticultural research.

Dr. R. H. Sudds and R. S. Marsh of West Virginia University and I. P. Lewis, Charles Hauck, Freeman S. Howlett, and Frank Beach of Ohio are among the speakers.

ARKANSAS—Thomas Rockrock of Springdale was elected president of the Arkansas State Horticultural Society at the recent annual election. Mr. Rockrock has served as secretary of the society. J. L. Murray of Garfield was elected secretary.

NEBRASKA—The State Horticultural Society elected the following officers to serve during 1939: Harvey Raben, Nebraska City, president; William Porter, Nebraska City, vice-president; J. F. Shubert, Shubert, treasurer.

Following the flag of high prices and easy money, growers are again considering the advisability of increasing the strawberry and raspberry output. The hot, dry seasons prior to 1938 reduced the acreage of these fruits and high prices prevailed as a result.

A good local demand for peaches and cherries, resulting in profitable returns to growers, has also aroused interest in these fruits.

Younger apple orchards for the most part are in excellent condition for another crop. Most older orchards have been seriously

(Continued on page 33)

MARCH, 1939



Every First Sweepstakes at 1938 Bangor Apple Show was won by Harry T. Bigelow & Son, Bloomingdale, Michigan. In addition, their 93 entries captured a total of 91 ribbons.

Prize PERFORMANCE RECORDS Require Prize PRODUCTION METHODS

With fruit, color and uniformity capture sweepstakes. With tires, the proof of prize-value is shown by the amount of safe, low-cost mileage it will deliver on your car or truck.

FISK TIRES for 40 years have held a reputation for long, safe, low-cost performance. They bring you many extra-value features not found in ordinary tires. Their most vital feature is the Anti-Friction cord which goes into all plies, making every ply a SAFETY PLY! . . . to give you plus-protection in that ever-dangerous blow-out zone.

See these safer money-saving Fisk Tires at your Fisk Dealer.

THE FISK TIRE COMPANY, INC.
Chicopee Falls, Mass.

FISK

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PLUS Protection IN THE BLOW-OUT ZONE

THE SHERWIN-WILLIAMS CO.
for winter varieties of apples to be washed.
1939 CODLING MOTH SPRAYING SCHEDULE

APPLICATION	PER 100 GALLONS OF WATER
CALYX SPRAY	3 Pounds S-W Arsenate of Lead
FIRST COVER SPRAY (4 weeks to 10 days after the bloom)	4 Pounds Lime Arsenate of Lead
SECOND COVER SPRAY (15 to 20 days after Calyx)	4 Pounds S-W Arsenate of Lead 1/2-gallon S-W Summer MulSION
THIRD COVER (7 days after sec- ond cover)	4 Pounds S-W Arsenate of Lead 1/2-gallon S-W Summer MulSION (Add Zinc Sulfate and Lime to tank first)
FOURTH COVER (7 to 10 days af- ter third cover)	3 Pounds S-W Arsenate of Lead 1/2-gallon S-W Summer MulSION (Add Zinc Sulfate and Lime to tank first)
SECOND BROOD —FIRST COVER	3 Pounds S-W Arsenate of Lead 1/2-pound Zinc Sulfate and Lime to tank first
SECOND BROOD —SECOND COVER (10 days to 2 weeks after first cover)	3 Pounds S-W Arsenate of Lead 1/2-pound Zinc Sulfate and Lime to tank first (Add Zinc Sulfate and Lime to tank first)
FOR EARLY SUMMER VARIETIES DUCHESS—NOT TO BE WASHED SUCH AS TRANSPARENT AND CALYX SPRAY—3 Pounds S-W Arsenate of Lead, 3 pounds Lime FIRST, 1/2-ounce Sodium lauryl sulfate, 1 pint Nicotine sulfate, 1/2-gallon S-W Summer MulSION oil, pounds Bentonite, 100 gallons of water. Write for detailed instructions on how to mix these products.	3 Pounds S-W Arsenate of Lead, 3 pounds Lime 1/2-pound Zinc Sulfate and Lime to tank first (Add Zinc Sulfate and Lime to tank first)

**YOU CAN'T GO
WITH THESE
FUNDAMENTAL
SW
SPRAY**

**GREATER
DEPOSIT**

**SHERWIN-WILLIAMS
SPRAY AND DUST MATERIALS**

'GO WRONG
THSE TWO
DENTAL
SW
PLAYS

THE SHERWIN-WILLIAMS CO.
DRY LIME SULFUR—SULFIX
SULFUR

1939 SPRAYING SCHEDULE

No Scab	No Russet	No Foliage Injury
Pre-Pink and Pink	3 lbs. Dry Lime Sulfur 5 lbs. SULFIX Sulfur	
Calyx	2 lbs. Dry Lime Sulfur 4 lbs. SULFIX Sulfur	
Additional Scab Sprays	1 lb. Dry Lime Sulfur 4 lbs. SULFIX Sulfur	

THESE DILUTIONS ARE PER 100
GALLONS OF WATER

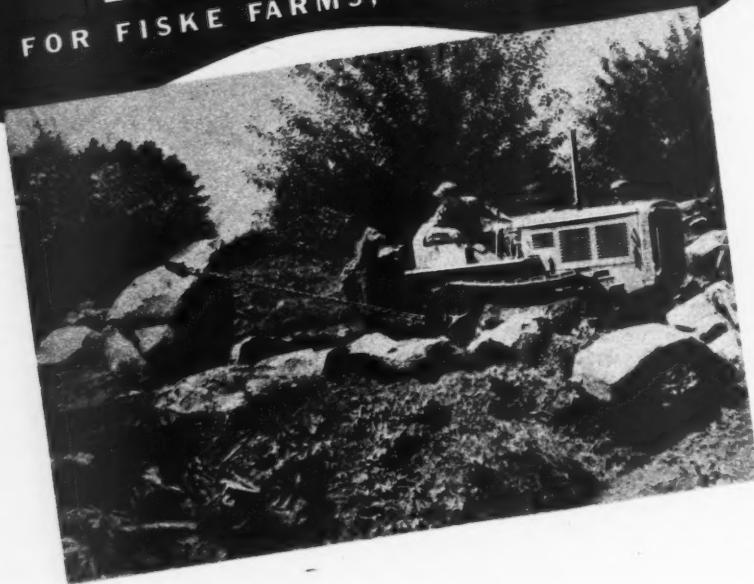
1 part Dry Lime Sulfur will make wettable up to 4
parts of SULFIX Sulfur.
Add 3 lbs. of Sherwin-Williams Arsenate of Lead to
each 100 gallons of spray when necessary. When using
arsenate of lead add 4 lbs. of hydrated lime to 100 gallons.

FINER
COLOR
FINER
FINISH

SHERWIN-WILLIAMS
SPRAY AND DUST MATERIALS

**DIESEL D2 SAVES
\$2²⁹ DAILY ON FUEL
EXPENSE ALONE—**

FOR FISKE FARMS, GRAFTON, MASS.



During a 600-hour working season in Fiske Farms, 500 acres of orchard, their Diesel D2's fuel cost per 9-hour day averaged only 41c. This compares to their spark-ignition track-type tractor's daily average of \$2.70 worth of fuel. So their Diesel D2 saves \$2.29 on fuel expense alone per day.

D. S. Fiske, Jr. reports: "The Diesel D2 covers 30 to 40 acres per day pulling a 600-gallon spray rig (8400-pound load) at a cost (for fuel, oil and grease) of \$1.41 per day—putting out 3000-4200 gallons of spray. The Diesel D2 is the first piece of farm machinery we ever bought we did not have to rebuild. We hold this tractor in the same esteem that we do our Exhibition Pack, which is our registered brand for high quality fruit."

Their sure-footed Diesel D2 shows

its stamina here, unseating huge boulders which it skids away to a swamp. It's built to the same standard as its bigger brothers. Many of these rugged individuals are still ringing up their big savings—after doing 15,000 hours and more, of heavy work!

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PEACH BREEDING

(Continued from page 9)

became established at practically the same period.

Previous to the era of modern spraying, varieties of fruits which would produce salable crops were largely planted even if low in edible quality. Representative illustrations include the Ben Davis apple, the Kieffer pear, and the Ives grape. Consumers of peaches were accustomed to buying fruit on the market blemished by scab and other pests. Fruit of rather ordinary quality met with some demand. By 1914, there were indications that improvements in spraying and a changing consumer demand would, in time, force the retirement of some of the varieties of peaches then under culture.

During the period 1905-14, such early peaches as Greensboro, Wadell, Carman, Connets, and Lola sold for profitable prices in the Northeast. There were indications, however, that better earlier varieties than these would be demanded in about 10 years. Mid-season varieties that were popular in 1914 were Hiley, Belle, and Elberta. The market prospects for these for a period of 10 years appeared to be better than for Greensboro and Carman. The New Jersey station therefore planned a major project in peach breeding in 1914 with two outstanding objectives: to determine facts about the inheritance of characters in the peach, and to develop one or more varieties to replace Carman and the quite similar varieties then grown.

Seven mature trees were covered with cheesecloth tents at Vineland, N.J., in 1914, and 20 different crosses were made.

Plant breeding appeals to many persons as a recreational pastime and as a hobby. It provides contact with plants and the soil and the fascination of anticipating new varieties and combinations of characters, one or more of which might be outstanding.

Breeding a new variety of plant such as a peach to meet a special need is also interesting work, but it carries with it responsibility for intelligent, efficient, and prompt procedure and early results. The breeding of any tree fruit such as the peach is a time consuming and a rather expensive process.

It requires one year to make the cross, another to germinate the resulting seeds and develop trees suitable for planting. At least three, and sometimes four, additional seasons are required before the seedling trees produce their first crop of fruit for observation. In other words, a period of at least five to six years is required to make a peach cross and obtain the first good crop of fruit.

At New Brunswick, N.J., about 220 seedling peaches are set per acre. Pruning, fertilization, tillage, and the spraying of 220 trees for a period of five to six years is a considerable expense, and this is but the beginning. One cannot safely make a final selection of seedlings upon the basis of the first crop produced. The period of observation should really extend for several crops as a minimum.

When a new seedling is judged worthy of commercial culture, the problem of propagation and introduction presents itself. It requires two growing seasons to bud and develop a one-year-old nursery tree. When these are then purchased and planted by commercial growers, a wait of another four years is to be anticipated. It can be said, therefore, that a minimum period of 10 to 12 years is required to breed and bring a new peach into bearing in commercial orchards.

When breeding work with peaches was first undertaken in New Jersey, very little was known about the inheritance of characters in the peach. Such knowledge is fundamental to efficient breeding, otherwise it is merely a gamble. It is now generally known that when certain plant characters are brought together in crossing, some are apparent to the eye in the progeny of the first generation and others are not. For example, when a pure white-fleshed peach such as Greensboro is crossed upon a pure yellow such as Elberta, all of the trees of the first generation progeny produce white-fleshed fruits. Thus it is said that white flesh is dominant over yellow. When a variety like Greensboro transmits only white flesh color, it is said to be homozygous for flesh color. When a white-fleshed variety such as Belle transmits both white and yellow flesh color it is said to be heterozygous for flesh color. During a period of 25 years many genetic facts have been established in regard to the peach, a few of which follow:

Pure white-fleshed varieties crossed with pure white, produced seedlings all of which produced white-fleshed fruits.

Heterozygous white-fleshed varieties crossed with heterozygous white gave seedlings of which 75 per cent produced white-fleshed fruit and 25 per cent yellow-fleshed.

Pure white-fleshed varieties crossed with yellow-fleshed gave progeny all of which produced white-fleshed fruits in the first generation.

Red flesh color about the pit is apparently dominant over absence of red.

Watery-melting flesh texture is apparently dominant over firm-melting.

(Continued on page 26)

MARCH, 1939

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HERE'S A PIECE OF
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THE 1939 Ford V-8 Truck is more than just "farm-to-market" power! It's true that in many instances it will make a comfortable profit for its owner doing only this type of hauling.

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Domestic SULPHATE OF AMMONIA

STRAWBERRY BREEDING

(Continued from page 11)

the first of May, when the most vigorous and disease-free seedlings are removed to nursery plots. The others are discarded.

The seedlings are planted in the nursery six feet apart on level rows which are six feet apart. They are clean cultivated during the summer. Soon after setting to the field in May, many of the plants begin to make runners and new plants, and continue to do so until the cool weather of November. By this time, from 250 to 500 plants have developed from the better seedlings. On the other hand, there are always a number of seedlings that produce few, if any, runner plants. These plants are allowed to remain in the nursery for one year, where they are studied for other characters.

For the first year, 20 to 40 plants of each of the better seedlings are planted one foot apart in three and one-half-foot rows for field study both at the Louisiana Experiment Station at University and at the Fruit and Truck Experiment Station at Hammond, La.

To insure possible infection with the two diseases, leaf spot and scorch, the seedlings are sprayed at 10-day intervals with a spore suspension solution of water from the time they have true leaves until after the fruiting period the following spring. In this manner the resistant seedlings are located. The spore solution is made by picking the diseased leaves from susceptible varieties and dampening them. These leaves are then placed in layers several inches thick between moist cloths and kept at room temperature for 48 hours. After this treatment they are placed in clean water, rubbed together, and the solution strained through a fine wire gauze into the spray tank. This solution is sprayed upon the plants immediately. Precaution is taken to get the spray under the leaves as well as on the top surface.

Most of the seedlings are eliminated during the first year, only two to five per cent being saved for a second year's study. The second year's investigations consist of making yield studies, quality analyses, and cooperative field studies with growers. At the end of the second year, it is possible to make a further elimination, keeping the very best for further trials and yield comparisons and trial

(Continued on page 28)

Coming
JUNE DIRECTORY
ISSUE

GRAPE VARIETIES

(Continued from page 13)

contributed greatly to American viticulture. Some of their early introductions, though planted in a limited way, even today are just receiving recognition of their worth, not alone for the value of their fruit, but they are showing themselves valuable forbears for some fine new grapes.

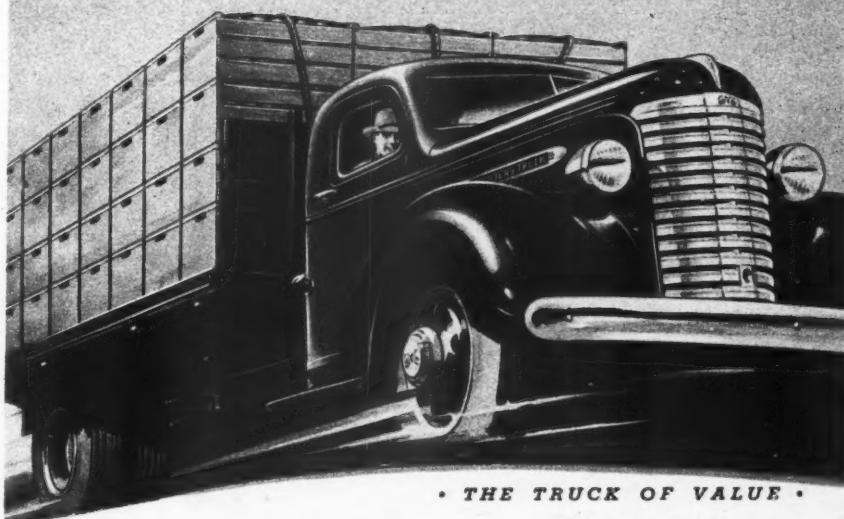
If one were to read the descriptions of these 2000 or more varieties, it would be noted that a large percentage are chance seedlings of well known sorts. Concord apparently predominating as a source. Some are chance seedlings whose mother parents have been open to cross pollination from nearby varieties, though this may or may not have actually occurred. Others have come from hand pollinations involving known parents. Observations covering many years have shown that at more or less frequent intervals there is a high germination of grape seed which naturally falls to the ground. The writer has observed dozens of seedlings growing beneath a single Concord in some seasons. During the past several years more and more attention of experiment station workers and grape growers has been directed to the development of new grapes through hand pollinations involving varieties as parents which might bring about certain defined objectives.

From time to time the writer has received specimen grape clusters from many parts of the country for comment or identification. Some of these are thought to be new varieties which have originated like Topsy, they just grew. In the main they are large-berried blue sorts, without much if any quality. We have had the opportunity to see some of these growing on the original stock. Others of them have been propagated from the cane or canes bearing the large fruits. With one exception, these abnormal-size berries have been found to be such because of a girdle on some part of the vine.

Several years ago our attention was brought to a very vigorous and productive vine growing in a five-acre block of Concord. The grower reported that year after year this vine was outstanding. The fruit was typically Concord. Various causes were eliminated and finally several hundred vines of it were propagated and fruited. None of the vines has equalled the parent in any respect after 25 years, and not a single individual is one whit different than any Concord vine from any source. During this same 25-year period a dozen or more high yielding, vigorous Concord vines have been selected because of their apparent superiority, and several plants propagated from each

(Continued on page 30)

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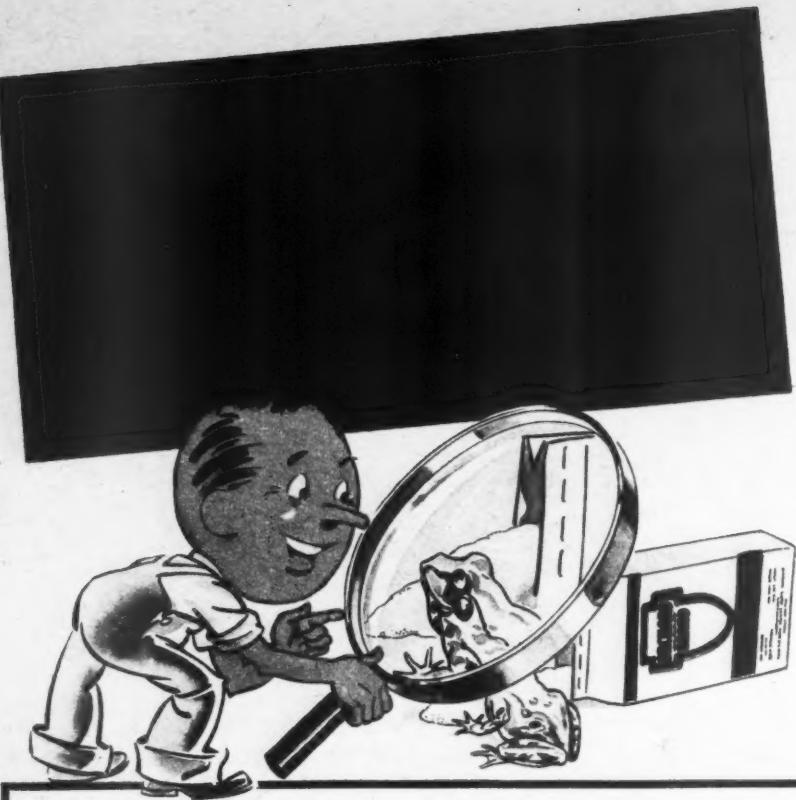
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MICRO-SPRAY* SULFUR is the finest micro-type sulfur made for commercial sprays. Its particle size exposes a maximum of sulfur surface. This assures high fungicidal activity and superior sticking qualities. Its properly adjusted wetting agent produces rapid dispersion in the spray tank and smooth filming on fruit and foliage.

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PEACH BREEDING

(Continued from page 23)

Heavy pubescence (fuzziness) of fruit is apparently dominant over light or absence of pubescence.

Small size of fruit is dominant over large.

Some tree types are dominant over others. Chili and Mexican Honey were dominant over J. H. Hale in crosses at New Brunswick.

The development of the Golden Jubilee is a good illustration of the practical use of a knowledge of the inheritance of characters. Greensboro, a homozygous early white peach, was crossed upon Elberta, a homozygous yellow, in 1914 and 1915. All of the first generation progeny produced white-fleshed fruits. Some of these were heterozygous. One called 38 E.G. when exposed to open pollination by others of the same cross, fruited, and a number of seedlings was obtained. One of these was later named Golden Jubilee.

Even a single variety of peach possesses many different characters. For example, Belle proved to be a heterozygous white-fleshed peach. When selfed in 1914 it transmitted both white and yellow flesh. Ambergem, a yellow-fleshed, non-melting cling of proved value for canning, and Eclipse, a yellow freestone, were selections from the progeny of Belle when selfed. Belle transmitted a factor for non-melting as well as a melting type of flesh. About five per cent of the progeny produced sterile flowers. A rather wide range in hardiness was also exhibited by the progeny resulting from self-pollination.

The modern requirements of a successful commercial variety of peach demand the consideration of a large number of plant characters by the breeder. It is not sufficient that the variety produce large, firm, attractive, good quality fruits. Those are only a few of the requisites. The author would list a few of the necessary qualities of a satisfactory new peach as follows:

The tree must be vigorous, hardy, and productive. Hardiness is used in a broad sense to mean dormant season tree and bud hardiness, resistance to frosts and unfavorable weather at blooming time, and resistance to drought. Some varieties are hardy in the dormant bud stage but tender at blooming time.

The tree should be fairly resistant to peach canker, bacterial leaf spot, and brown rot.

The fruit should be large, symmetrical, uniform throughout the tree, slow ripening, with light pubescence, skin well covered with red, rather thick, and capable of resisting ordinary handling.

The flesh should be free of greenish or unattractive coloring, fine grained, firm, of high edible quality, and should part readily from the stone for the fresh fruit trade.

There is an increasing demand that the fruit be low in catechol tannin content. Such varieties as Elberta and J. H. Hale are relatively high in tannin. Sunbeam, obtained as the result of a cross of Slapley x Dewey at New Brunswick, appears to be an exceptional variety in being practically free from tannin as grown in the Northeast.

It is not difficult to obtain certain combinations of a few characters. It is doubtful, however, if any variety is likely to be ideal in every respect. The larger and more free of pubescence a variety of peach becomes, the less hardy or the more susceptible to some pest, such as bacterial leaf spot or brown rot, it is likely to be. Some weak or undesirable characters are sometimes found to be linked with desirable characters and difficult or impossible to separate.

The statement is not infrequently heard that if we had a series of Elertas ripening throughout the season, it would be ideal from a commercial standpoint. This is extremely doubtful. Elberta has made an outstanding commercial record, but it has one serious fault—low edible quality. This will become more and more evident as higher quality varieties become available. If we finally were able to regiment production to a series of Elertas, the public would likely decide at about that time that it wanted something different in peaches. The Crawfords and other so-called Persian type varieties were at their peak of popularity on the eastern seaboard at the close of the 19th century. The Greensboro and Carman types attained their peak in the same region from about 1905 to 1920. Elberta dominated the plantings most completely from 1920 to 1930. Since then it has been gradually giving way to others from Georgia to New Jersey.

There is every reason to believe that within a period of from three to five years, consumers in the large fresh fruit markets will demand varieties which excel Elberta in edible quality as it is generally grown and placed on the market.

Under modern commercial conditions too many varieties are a handicap to the grower who disposes of his crop in a wholesale manner. Dealers want a variety with which customers are familiar. The name and grade of a variety must be specified upon each closed package. Each variety is likely to require some variation in cultural treatment for best results. There is likely to be

(Continued on page 29)

MARCH, 1939

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Now the railroads have "implements" too. You know them as box cars, cattle cars, passenger cars, locomotives and things of the sort. And the railroads have about five and a half billion dollars invested in such equipment.

You might think, with this investment, that new purchases would hardly be needed.

But it's just like farming. And with all their implements, American farmers bought half a billion dollars worth of new equipment in 1937.

So, the railroads, in order to keep abreast of the times, must also buy new "implements." In the past ten years ending with 1938, they spent an average of about 165 million dollars per year for additional equipment.

This money has brought several

advantages to shippers such as you. It has increased the pulling power of locomotives, for instance, 17%. It has helped to increase the carrying capacity of freight cars. It has played a part in increasing the speed of freight trains 50%.

But the railroads' job, like that of the farmers', is never finished—and if the railroads are to keep on doing the best all-round transportation job in the world they need to keep on replacing old "implements" with new ones. If they had the money they could spend to advantage at least one half billion dollars a year for the next five years just for new "railroad implements."

All of which means, the railroads need a fair chance to earn a living, so they'll be in good shape to move farm products to market when you want them to go.

A program of Federal and State legislation looking toward giving the railroads that fair chance to earn a living is outlined in a recently published booklet called, "For Better Times—A Square Deal in Transportation." Write for a copy.

SAFETY FIRST—
friendliness too!

ASSOCIATION OF
AMERICAN RAILROADS
WASHINGTON, D.C.

But after warm winters, the opening of their buds may be delayed. Some years, however, even with the delayed starting, there is enough fruit to set a good crop, although time of ripening will be late. In most years there is enough leaf bud growth to support a good crop. There may be losses from shedding of buds after warm winters with such varieties as Climax, Burbank, Beauty, and Santa Rosa. After exceptionally warm winters, blossoming may be too late to set a crop on Climax and Burbank.

The American species of plums have long chilling requirements. Some of these types do not start growth at all after warm winters and use of a special oil emulsion is resorted to in January.

Probably most injurious of the results of an extremely warm winter is the shedding of unswollen fruit buds in late winter or early spring, especially for those fruits that have only flower parts in the fruit buds. Apricots and some varieties of peaches and plums shed their buds during or after warm winters even in the northern California fruit sections.

STRAWBERRY BREEDING

(Continued from page 24)

shipment of the most promising ones. So far, no new varieties have been released, although there are three promising seedlings now under advanced field and shipping tests.

Strawberries are very much like corn in that most varieties are at their best within definite regions. To make progress by breeding, the work must be done within the general area or under climatic conditions similar to those where the plants are to be grown.

Recently announced is the new El Monte Thornless Boysenberry. Originating as a "sport" from thorny Boysenberry plant, this new type is reported to be equal in hardiness to the plant from which it developed. Seasonal fruit production is said to be at least 10 days ahead of the thorny Boysenberry. The Thornless Boysenberry is suggested as a companion berry to the Nectarberry since the latter bears its crop through midseason.

Complete
JUNE DIRECTORY
ISSUE

PEACH BREEDING

(Continued from page 27)

an increasing demand that new varieties receive some sort of a "clearing house" test before they can be introduced.

Since 1925, the New Jersey station has named and introduced 23 varieties of peaches and one nectarine. The varieties which were developed to replace Carman were Cumberland, Pioneer, and Golden Jubilee.

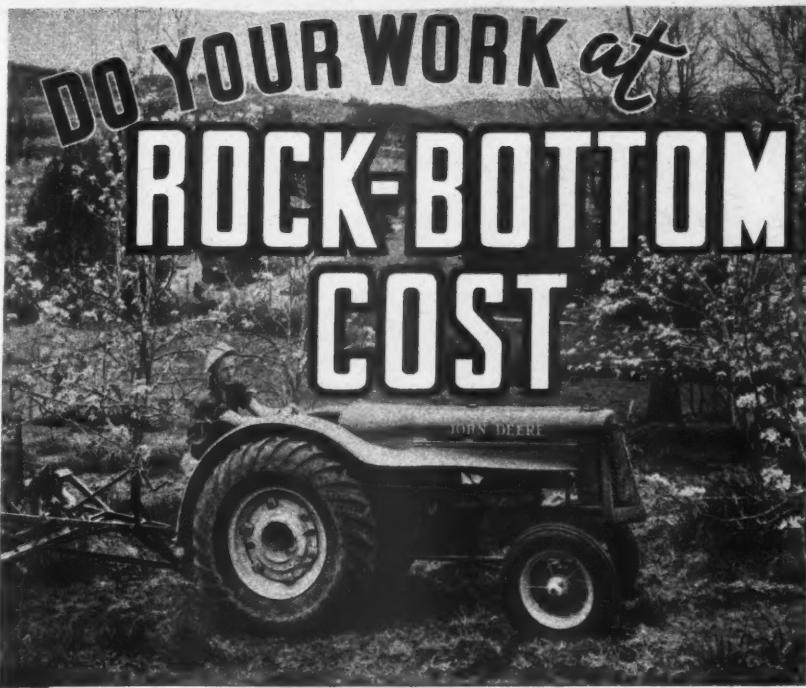
In 1928, a Peach Council of 10 practical growers, appointed by the president of the State Horticultural Society, was made a feature of the peach breeding work. This council visits the station, examines new varieties that are promising for introduction, makes recommendations as to future procedure, and has established a dependable source of trees for planting. The technical phases of the breeding work are thus balanced and promoted in a manner most suited to the needs of the growers of the State. The practical influence of this work is briefly demonstrated by the following data.

The first introduction of varieties to New Jersey growers from the scientific breeding work occurred in 1925. At that time, not a single station-developed variety was listed among the 10 most important ones grown in the State. In 1937, or 12 years later, three station-developed varieties were among the first 10 in total numbers of trees of all ages, two of which ranked in the first five. When only young trees, three years and under, are considered, the number of new station varieties among the first 10 is increased to seven. Marked changes in peach varieties are likely to occur in any district within the next decade.



G. S. Carpenter, prominent production manager of American Fruit Growers, Inc., appeared twice on program at Indiana society meeting.

MARCH, 1939



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GRAPE VARIETIES

(Continued from page 25)

and planted. In no instance have any improvements been noted among the selections when compared with random vines obtained from the nursery and grown under like cultural care over a period of years.

It is the supposition of some vineyardists that the Concord as now grown has "run out," due, they think, to the propagation from the same vines year after year. However, comparisons made between any lot of present-day Concord with those propagated directly from the original Concord as it was growing 25 years ago at Concord, Mass., indicate that any well-grown vine of today is no different in any respect than vines originating today from the parent vine.

In view of the fact that in all the descriptions of American grapes available and reviewed by the writer, only one is suggested as a probable "bud sport," this would seem to indicate that the tendency of the grape to "sport" is rare, or that the true origins of most of the 2000 described varieties are not accurately known. It seems more probable that the first assumption is the correct one since the search for "bud sports" over the past 25 years has brought to light but a few cases of known bud variation. Yet the fact that an occasional variation has been noted should stimulate all growers of this fruit to be on the alert for such possibilities. To the best of the writer's knowledge the following are the only true "bud sports" of the grape known at present.

Hubbard Seedless and Concord Seedless varieties have been grown and observed carefully for over 25 years in the same vineyard. Plants of the Hubbard Seedless were acquired from the T. S. Hubbard Nurseries, Fredonia, N. Y., which had received the variety from a grower and hybridizer in Arkansas. A few years later the Concord Seedless was called to the attention of some of the horticulturists at the experiment station, Geneva, N. Y., but from an entirely different source. A careful study of the botanical and horticultural characters indicates that the two are identical. While the berries, especially the larger ones on the cluster, may contain an occasional seed, the others have but soft, small rudiments of seed. The flavor is typically Concord, but owing to the fact that the skin is chewed in the eating, it seems tastier than its parent. The vigor of both varieties is approximately that of Concord. Like its parent, the stamens of both are upright, and the pollen of each is highly viable.

Concord Seedless was found growing in a block of seeded Concord at Rushville, N. Y., sometime previous

to 1913, by the owner of the farm. Previous to this time the seedless vine, or any part of an ordinary Concord bearing seedless berries, had not been noted. Unfortunately, it is not known whether the vine which yielded the seedless berries produced seedless fruits exclusively or but a single arm or cane. It is possible that the seedless vine in the Rushville vineyard was one of a lot of seeded Concord grown by and purchased from the Hubbard Company. The fact that no other seedless vine of Concord has been reported from other localities would indicate that the Hubbard Seedless propagated by this nursery was not being dispersed through its mixture with the seeded form. It will be seen later that Concord has thrown identical bud variations in another direction, hence it is tenable that two seedless forms might be the result at different times and from widely separated sections.

In 1889 the experiment station at Geneva, N.Y., received from Watkins, N.Y., a grape coppery-bronze in

Remember JUNE DIRECTORY ISSUE

color but which in all other characters resembled Concord. If one could not see the fruit he would not know whether he was eating Concord or Glenfeld, the name given the new variety. It was named by the vineyardists who found it growing in a block of Concord which were on the farm at the time he purchased it. The variety has never been grown commercially, and probably only a few vines have ever been planted. Glenfeld has always been considered a seedling of Concord. In 1913 it was added to the variety vineyard in the Vineyard Laboratory at Fredonia, N.Y. In 1936, the writer's attention was called to a vine growing in a large block of 20-year-old Concord situated a half mile from the laboratory. The fruit carried on one arm of this vine was normal Concord, while the other arm bore the coppery-bronze fruit of the Glenfeld. Comparative examination of the fruit and seed of this was made with Glenfeld growing on the laboratory grounds and was found identical.

Since no one had been interested in the variety, no cuttings or roots had been sent out for trial, and the owner of the Concord vineyard in which the second Glenfeld was found had never done any grafting. The owner of the vineyard had noticed the different colored fruit on this vine a

(Continued on page 34)

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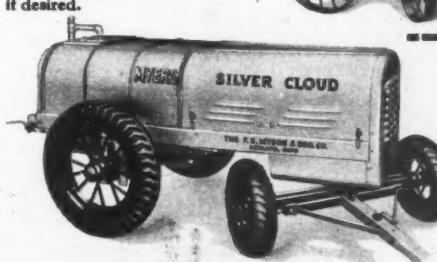
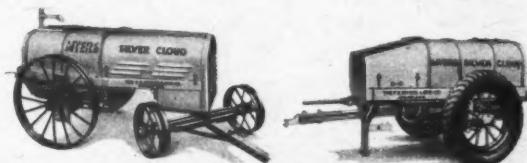
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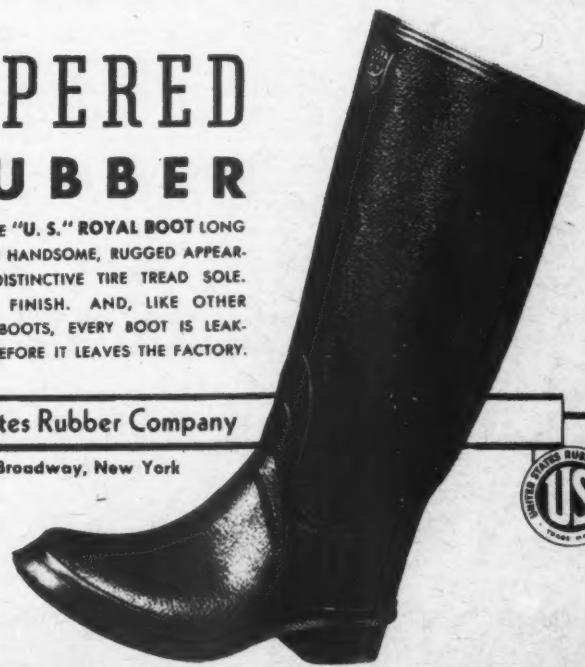
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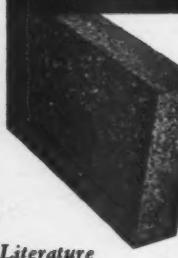


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PAGE 32

POLLINATION

(Continued from page 17)

many localities, bees properly prepared for orchard use will not be in shape for a later honey flow. This partially accounts for their high rental costs, for no profit can be realized from their honey stores. Some beekeepers, instead of building their colonies to full strength in time for the fruit bloom so the orchardist will get his money's worth, put weak hives in the orchard to build up their strength for a later honey flow. Thus the man who hires the bees is getting the least value from the transaction.

The work of preparing the colonies for early spring pollination properly begins the preceding summer. At this time the old queen in each hive is killed and a young laying queen of good vigorous stock is introduced, for a young queen will continue to lay later in the fall and start laying earlier in the spring. There should be an ample supply of honey in the hives during August and the fall months to encourage the queen to lay prolifically during this period, as from these eggs the bees that will live over the winter and begin the early spring work are hatched.

With the approach of winter, the colony's honey stores should once again be checked and replenished, if necessary, with sugar syrup. The hive is then given a good windbreak and whatever winter protection is required in that locality. This protection, however, should be ample, so as to start brood rearing early, and to prevent the brood from being chilled.

Very early in the spring (the starting date varies with the locality and the weather condition) the bees are fed warm sugar syrup each day. The syrup is mixed with equal parts sugar and water. Usually not less than one-half pint a day is fed. This starts the queen laying much sooner than she ordinarily would. The feeding is continued nearly up to the time the hives are placed in the orchard.

Colonies handled in this manner are a revelation to one who has been used to uncared for hives. The hives are literally packed with worker bees, bees that will do the work of two or three ordinary hives.

Naturally, the orchardist must depend on the integrity of the beekeeper to have his bees in the best condition possible. If they are not, there is little that can be done about it. If the orchardist will equip himself with adequate protection against stings i.e., veil and gloves, he can open a hive and see for himself the condition of the bees. Bees are easily handled during the spring without offering to sting. If the grower hesitates to do this, it is a good idea to visit the apiary during a warm sunny spell in early spring and rent only those hives that have a good flight of bees.

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MARCH, 1939

STATE NEWS

(Continued from page 19)

Weakened but conditions look favorable for the coming year provided rainfall is more nearly normal. Most of Nebraska's home orchards have gone with the hot winds. Commercial growers in favorable locations are beginning to profit by these losses.—E. H. HOPPERT, Sec'y, Lincoln.

PENNSYLVANIA—J. A. Runk, Huntingdon, was elected to the presidency of the State Horticultural Association at its recent annual meeting. Other officers for 1939: H. W. Skinner, Chambersburg, vice-president, and H. M. Anderson, New Park, treasurer.—J. U. RUEF, Sec'y, State College.

NEW YORK—The Rochester and Kingston meetings of the New York State Horticultural Society are always barometers of the state of mind and the pocketbook in New York State fruit growing circles. They give a good indication of what growers are thinking, planning, and hoping for the coming year.

This year's meetings were no exception. Interestingly enough, both meetings brought out a really aggressive spirit on the part of growers. The despair of a few years ago, followed in turn by hope a few years later, has now given way to a confidence that New York State has opportunities and that growers are in position to take care of them if only they will knuckle down to the task.

As Dr. W. I. Myers of Cornell put it, "the East has a fair advantage"—but this advantage is one that cannot be kicked around. Palmer Hart of Red Hook said, "The trouble with us is that we have thrown our opportunities into the Hudson River rather than our culs." Director V. R. Gardner of Michigan said, "Use the distributing channels, don't buck them, improve the grade of fruit, and sell more fruit juices."—H. B. TUKEY, Geneva.

VIRGINIA—Strawberries, Youngberries, and Boysenberries are being recommended to Frederick County growers—not as a sideline but as a full-fledged crop—by D. A. Tucker of the State Extension Division.

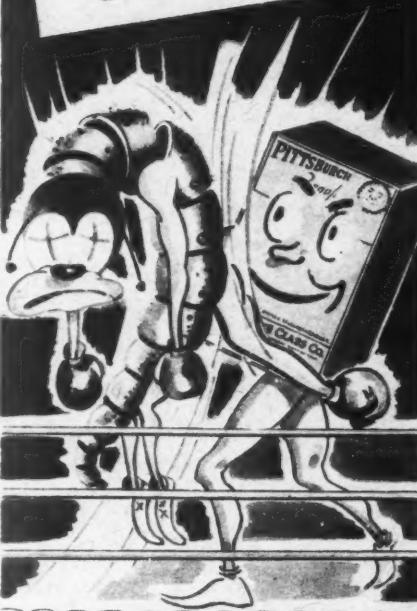
There is more market than product insofar as berries are concerned in this section, states Tucker. Principal outlets for the crop are preserving plants in Winchester and Front Royal and the local market. In event of a large surplus, the fruit could be easily marketed in the metropolitan area of Washington, according to Tucker.



After a busy day at his State society sessions, veteran fruit grower W. S. Perrine, Centralia, Ill., relaxes while talking in hotel lobby.

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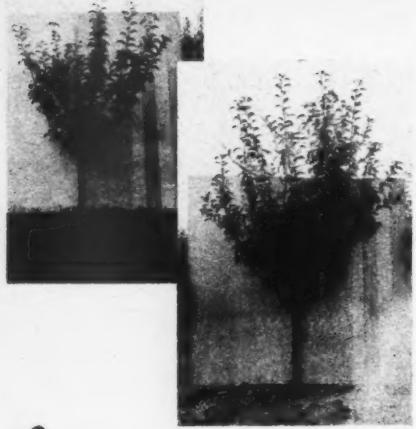
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PAGE 33



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GRAPE VARIETIES

(Continued from page 31)

few years before 1936, but he had neglected to mark the vine, hence no cutting wood from it had been propagated. Since the Concord vines had been purchased from a nursery many years previously, it is quite likely that the "sporting" which resulted in this strangely-colored variety actually occurred in this grower's vineyard.

In view of the recurrence of a coppery-bronze Concord after nearly a half century, it would seem that when and if Concord "sports," the variation is quite likely to be occasionally in fruit color, though it has already been indicated that the "sport" may be nearly seedless.

Pinot noir, a Vinifera variety, has been grown for a great many years in France. As the name indicates, it is a black or blue colored sort, mainly used for wine. In addition to the black Pinot, there is the white or green Pinot. Prince, in his "Treatise on the Vine," published in 1830, says, "Under the name Pinot or Pineau a great number of red and black varieties of grapes are found in various French vineyards, which are in fact totally different in character and serve only to make inferior wine; great care and circumspection are therefore necessary to obtain the genuine kinds." It is further stated that the true Pinot is characterized by berries having the shape of the pine cone, while the variations have roundish ones. Viala, in his "Ampelographie," states that the Pinot has been known to "sport" on more than one occasion, resulting in a red variation.

In the experiment vineyards at Geneva, Pinot gris, the greenish variety, has sported at least once during the last few years, resulting in a red variation. Thus, over a century ago

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MARCH, 1939

these varieties were showing the same tendencies to vary, many hundreds of miles distant, that they are today.

During the past summer our attention was directed to a possible "sport" of the Niagara. The vine showing the tendency is mixed with several vines of the same variety growing in northwestern Pennsylvania. In this case there is no color change, except that possibly the suspected variation yields berries that possess a luster that is not characteristic of the true Niagara. They are, however, larger and the skin is thinner. Leaves of this variation are roundish in outline and are not the typical Niagara indented type. Fruit is borne on one arm of a true Niagara plant, which bears normal Niagara clusters with all the known characters of the variety.

In view of the variation of Concord, which has resulted in the Concord Seedless and the Glenfeld, is it not likely that some of the large-berried blue sorts that are quite similar to Concord in other characters and which have been distributed under such names as Giant Concord, King, Mammoth, and Mammoth Concord as seedlings of it, are "bud sports" rather than seedlings? When one reads of the origin of grape varieties, he cannot help but be impressed with the fact that their beginnings are not too definitely known. It is quite possible that a variation might pass unobserved in a considerable number of vines when it first occurs, yet if cutting wood is taken from the vines promiscuously, the "sport" conceivably might appear several years later in several localities as a distinct variety without the grower knowing anything of its true origin. Grapes with berries very similar to Eaton have been brought to the writer's attention almost annually for many years from widely separated sections. It seems most unlikely that these are the original Eaton which has been disseminated as a mixture in lots of Concord, but rather that they are "bud sports" of the latter.

Thus "sports" of Concord, while not particularly numerous, have been noted often enough to justify the assumption that other variations of it have possibly occurred, though they have not come to the attention of those who recognized them as such. In the harvest activities of a commercial vineyard, any unusual type of fruit could easily escape the eyes of the workers, yet it has been from relatively large blocks of vines that the few "sports" of Concord have been noted. While artificial pollination of known mother parents remains the surest and quickest method for production of new grape varieties, there is still the possibility that something good may come from the variations or "sports."

MARCH, 1939

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Our assortment of fruit trees and other nursery stock is complete and the highest quality. Please write for prices.

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Shenandoah, Iowa

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Only 15c a Word—CASH WITH ORDER. Count each initial and whole number as one word.
ADDRESS: AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland, Ohio

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PACKAGE BEES FOR POLLINATION, TWO-POUND package with queen, \$2.45. Three-pound package, \$3.15. Four-pound package, \$3.85. Also cypress hives. Write for catalog. STOVER APPIARIES, Mayhew, Mississippi.

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EARLY RIPENING THORNLESS BOYSENBERRY. Only genuine plants this sensational berry. New Sweet Nectarberry, Boysen, Bauer Thornless Loganberry, Rockhill, Perfection, Everbearing Strawberries, Giant Cherry, Rhubarb, Others. Buy from original plantings. Cultural Guide Free. BENEDICT RANCHO, 1037 Deana, El Monte, California.

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PERKINS GOOSEBERRIES, LARGE, HARDY. 1½ inches long, 1 inch wide. Tested in Minnesota since 1920. Prices on request. PERKINS BROTHERS, R. 6, St. Paul, Minnesota.

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BOYSENBERRY SPECIALISTS—WE GROW AMERI-ca's Finest GENUINE Northern Grown Boysenberry plants. Catalogue Free. BOYSENBERRY PLANTATION, Lapeer, Michigan.

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PRECISION PARMAK NOW WORLD'S LARGEST selling Electric Fencer. Five new models, \$9.95 up. Dealers wanted. Valuable exclusive territories open for immediate acceptance. PARKER-MCCRORY MFG. CO., Kansas City, Missouri.

MAKE ELECTRIC FENCER FROM OLD AUTO COIL. Protects orchards. Complete plans and valuable catalog 10c. Le Jay Manufacturing, 963 Le Jay Building, Minneapolis, Minnesota.

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PRUNING, GRAFTING, BUDDING TOOLS—KNIVES, Saws, Shears, Hand and Pole Pruners, Jones Patch Budders, Wicker Wax Melters, Rasps, Rubber Budding Strings, J. & J. Nursery Tape, Tree Seal, Tree Kote, Sa-Va-Tree, Hormodin, Peat Moss, Tree Surgeon Supplies, Cod-o-cide Tree Bands, etc. EDWIN C. TYSON, Wholesale and Retail, Flora Dale, Pennsylvania.

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POTASH FERTILIZER (CANADIAN HARDWOOD Ashes). Write for Free Circular explaining use. GEORGE STEVENS, Peterborough, Ontario.

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EVENTUALLY YOU'LL LIVE IN FLORIDA. KEEP in touch with its agricultural opportunities by subscribing to its leading citrus and truck magazine. 50¢ per year; 3 years, \$1.00. FLORIDA FARM AND GROVE, Jacksonville, Florida.

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30 REBUILT SPRAYERS, REPOSSESSED AND DEMONSTRATORS. Washers, Cleaners, Graders, Spray materials, Dormant spray, Fertilizers. Write to CORY ORCHARDS, 136 So. Senate, Indianapolis, Indiana.

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COD-O-CIDE CHEMICALLY TREATED BANDS. THE choice of careful growers for the control of Codling Moth since first introduced 12 years ago. How many 250 ft. rolls 2 in. wide shall we quote you? EDWIN C. TYSON, Flora Dale, Pennsylvania.

WRITE FOR CIRCULARS AND PRICES. CHEMICALLY treated bands. Satisfaction guaranteed. EDWIN C. HOUSE, Saugatuck, Michigan.

CHEMICALLY TREATED TREE BANDS. M. A. KOELLER, Barry, Illinois.

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NEW AND USED TRACTOR PARTS AT TREMENDOUS Savings—Write for free 1939 Catalog. CENTRAL TRACTOR WRECKING COMPANY, Boone, Iowa.

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CERTIFIED FROST PROOF OPEN FIELD GROWN cabbage and Onion Plants. Ready now! Cabbage strong well rooted from treated seeds, fifty to bundle, mass to roots, labeled with variety name, all varieties. Prepaid 200c; 300c, 75c; 500c, \$1.00; 1,000, \$1.75; Express collect, 2,500c, \$2.00. ONIONS. Crystal Wax, Yellow, Bermuda, Prizetaker, White and Yellow Spanish, pre-paid, 500c, 60c; 1,000, \$1.00; 6,000, \$3.50; Express collect, 6,000, \$2.50. Prompt shipment. Satisfaction guaranteed. Write for free Catalogue. UNION PLANT CO., Texarkana, Arkansas.

THE VALUE OF NUT TREES IN FORESTRY

MOST cultivators of nut trees are chiefly interested in their possibilities as producers of nuts. Yet a number of nut tree species are of considerable value to the forester as well as being valuable nut producers. At the Boston meeting of the Northern Nut Growers' Association, Prof. R. P. Holdsworth of the Department of Forestry of the Massachusetts State College set forth the characteristics of some of the nut trees of central New England for forestry purposes. He lists the dual purpose trees of this region as the beech, the butternut, the alder and non-productive chestnut, several hickories, and to some extent the black walnut.

Prof. Holdsworth lists the values that may be expected from nut trees indigenous to or established in the forest. Of first importance are the timber values. The nuts may be valuable commercially and as food for forest animals. In addition to these rather obvious things, certain aesthetic and soil holding and building values may on some forests even outweigh the more tangible crop values.

Discussing the beech, Prof. Holdsworth describes it as being climatically adapted to New England, slow of growth, but long-lived, sometimes reaching an age of 300 years and a height of more than 100 feet. The tall trunk, wide branching habit, and airy crown make it one of the handsomest of New England trees. It is tolerant of shade and makes a good understory tree. It reproduces well from seeds, sprouts, and root suckers. The heavy, hard, tough wood has many uses.

The butternut, unlike the beech, does not occur in abundant stands, but is an occasional member of the forest. It is intolerant of shade and competition, grows rapidly, producing a tall, well formed bole with a narrow crown. It reproduces readily from both seeds and sprouts, and is easily maintained in the forest where it often reaches an age of 75 years. Wood is soft and weak, but beautiful in color, grain, texture.

The hickory is one of the most useful of forest trees that have wide soil and climatic adaptations. In addition to its usefulness as a timber tree, the nuts are a valuable food for wild life in the forest.

The black walnut is an aristocrat among forest trees, majestic in size and form, rich in fruit, and incomparable in its dark glowing wood. It grows naturally in rich, deep soils.

Prof. Holdsworth considers the butternut, the shagbark hickory, and the black walnut the nut trees of the central New England region which the forester should foster and cultivate.

Since timber crops require a long period to mature, the periodic crops of nuts from nut trees which may be harvested or used as food for wild life makes them worthy of consideration by the forester.—GEORGE L. SLATE, Sec'y, Northern Nut Growers' Assn., Geneva, N.Y.

FROSTPROOF CABBAGE, ONION, AND COLLARD plants, all varieties, \$1.00 per thousand. Lettuce and Beets \$1.25 per thousand. Cauliflower \$3.00 per thousand. All varieties of Tomato, Porto Rico Potato plants \$1.50 per thousand. Sweet and Hot Peppers \$2.00 per thousand. Not Prepaid. COLEMAN PLANT FARMS, Tifton, Georgia.

SAMPLE PLANTS—YOUR CHOICE OF 25 FROSTPROOF CABBAGE OR ONION PLANTS for 10¢ postpaid. 1939 catalog of all kinds of vegetable plants with special premium offers mailed free. Write today. PIEDMONT PLANT CO., Box 913, Albany, Georgia.

VEGETABLE PLANTS: GROW VEGETABLES two weeks earlier with Carlisle hardy field grown plants. Cabbage plants \$1.00 per thousand, Onion, 60¢; Tomato, \$1.50; collect. Write for complete information. CARLISLE PLANT FARMS, Valdosta, Georgia.

FROSTPROOF CABBAGE PLANTS LEADING VARIETIES. Immediate shipment: 500c—35c, 1000c—\$1.00, 5000c—\$4.50, 10,000c—\$8.00. Will ship C.O.D. Free catalog tomato and other vegetable plants. OMEGA PLANT FARMS, Omega, Georgia.

ASPARAGUS: MARY WASHINGTON RUST-RESISTANT. Clean, healthy, one and two-year roots. Fresh dug as ordered. Lowest prices. WRIGHT NURSERY, Hamburg, Iowa.

WANTED

GRAFTING AND BUDDING. WILL GO ANYWHERE. Grafts and cuttings made to order. 15 years experience. HOWARD H. MARTIN, Princeton, Illinois.

NEW

- SELF-PROPELLED SPRAYER
- HIGH PRESSURE PUMP

By HANDY ANDY

I've picked up more practical pointers on fruit farm machinery at the fruit meeting exhibits this winter than I've been able to absorb while attending meetings during the past 10 years. And when I watched growers looking over the equipment, asking the commercial people all kinds of questions, I knew that others were picking up helpful information, too. If, as we go along from month to month, I can show you some new equipment, or products, or materials about which you will ask questions as to how they can be used on your own place, then I'll be well satisfied.

SELF-PROPELLED SPRAYER •

What looks to be a real piece of machinery for the producer of row crops who wants to do a bang-up job of pest control is the recently-announced sprayer which propels itself by means of a cleverly arranged sprocket system. While made primarily for row crop spraying, the unit can be efficiently used as an all-purpose spray machine.

The sprayer pump is the junior duplex type having two porcelain-lined cylinders and a capacity of three and a half gallons a minute at 300 pounds pressure. The two horsepower air-cooled engine transmits its power to pump and wheels through steel roller-chain drive. A propeller-type agitator inside the 30-gallon corrosion-proof steel tank is driven by chain and sprocket from pump shaft. The tank opening is screened.

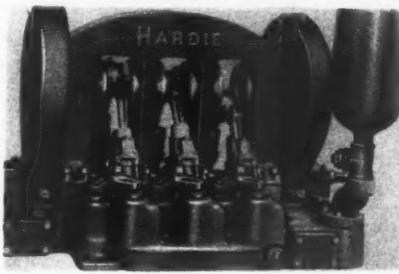
Operation of the pump is continuous whether the sprayer is moving or standing. A jaw clutch is within easy reach of the operator who walks in back of the sprayer to steer it. The four-inch flanges

on drive wheels prevent cutting the soil. Adjustment of the nozzle height is easily accomplished by raising or lowering the boom on the vertical supporting shafts. Turning of the sprayer in its own radius is possible because of the steel caster third wheel.

The unit is seven feet wide and five feet high. Front view of the sprayer is shown in lower illustration.

HIGH PRESSURE PUMP •

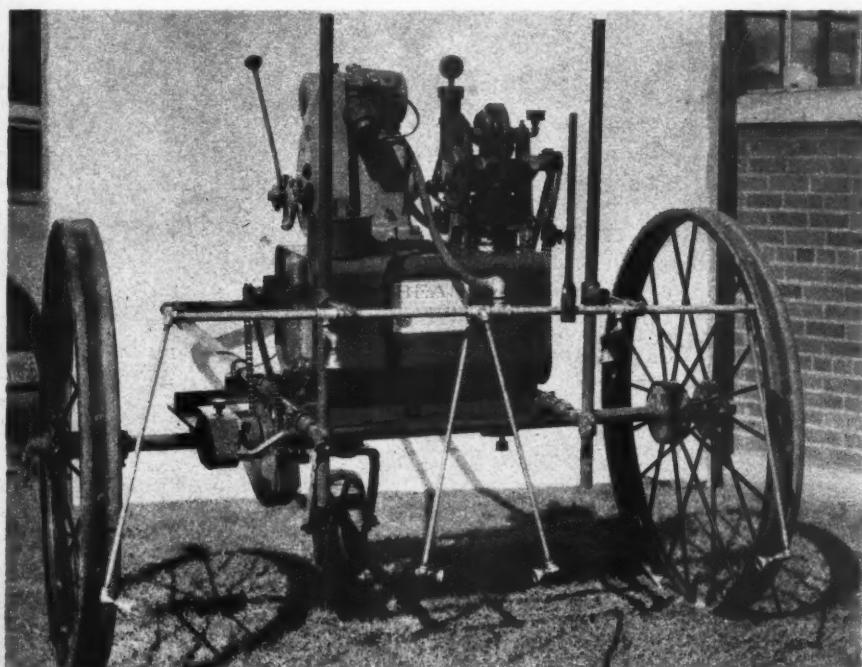
To meet a demand for greater capacity and pressures, the new spray pump shown in accompanying photo has been developed. The six cylinders of this big pump deliver 80 gallons of spray solution per minute at



1000 pounds pressure. Cylinders are arranged in an inverted "V" formation. Suction and discharge outlets are provided on both sides of the pump to allow for convenient mounting in stationary installations, and it can be driven from either side or in either direction.

Opposed helical gears eliminate end-thrust in crankshaft and countershaft. A large suction chamber in the pump base provides an abundant supply of solution to the cylinders at all times. Oversize waterways and full-opening valves prevent any restriction of flow of the spray solution.

This pump, say the engineers, operates up to its rating at slow speed—130 revolutions per minute. All pump parts are readily accessible for repairs or replacement.



*
SPRING IN THE AIR.
AND SANI-FLUSH
IN YOUR RADIATOR!



CLEAN OUT ANTI-FREEZE
WITH SANI-FLUSH

It's time to remove the anti-freeze from radiators! Also a whole winter's accumulation of rust, scale, sludge and sediment! They clog the delicate veins of the cooling system. The motor overheats. You waste power. You may find yourself with an expensive repair bill on your hands.

Don't take a chance. Clean out anti-freeze with Sani-Flush for 10c (25c for the largest trucks and tractors). Just pour it in. Run the engine, drain, flush and refill (directions on the can). Then your radiator is really clean. And your truck runs cool. Do it yourself. Or, if you prefer, have your garage or service station do it for you. Insist on Sani-Flush. It cannot injure motor or fittings. You'll find Sani-Flush in most bathrooms for cleaning toilets. Sold by grocery, drug, hardware, and five-and-ten-cent stores. 25c and 10c sizes. The Hygienic Products Company, Canton, O.

Sani-Flush *Safe NOT CAUSTIC*
KEEPS RADIATORS CLEAN
KINKADE GARDEN TRACTOR
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A Practical, Power Plow and Cultivator
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MOSCOW IDAHO AF3

SUCCESSFUL ORCHARDS

● A "ROUND TABLE" PAGE FOR EVERY GROWER ●

REPELLENT IS AID TO BEEKEEPER FRIENDS

BECAUSE he has sincerely tried to find something for helping beekeepers whose bees are injured by poisonous sprays, William L. Heuser of the Indiana Heuser Orchards offers his "Round Table" contribution at a time when it will be of most value to his fellow growers. Mr. Heuser states:

"As the time has arrived for the orchardist to look over his wants in the way of spray materials, I think we should decide to give our beekeeper neighbors a break this season and win their friendly attitude toward the orchard man. We need their bees, so let's not poison them. We can keep their bees out of our orchards when they are not wanted.

"In the Heuser orchards a repellent is used on the petal fall spray and in some of the later sprays to keep the bees off the wild flowers under the trees where some of the poison spray solutions have fallen. We use as a repellent one pint of crude carbolic acid to every 100 gallons of spray material. The acid will cause no damage to trees, leaves, or fruit. We have used the acid as a bee repellent for the past nine years."

RECOMMENDS GOGGLES FOR TREE TRIMMING

"GOSH, that came close," might be an expression heard in any one of thousands of orchards up and down the land during the pruning season. Dodging branches and prunings has become an art on the part of many a grower. Have you ever thought what might happen if you didn't dodge those twisting branches when you're making a long reach or after you've made the cut?

Apparently Ohioan C. H. Loomis has, for he makes the helpful suggestion that, "I believe a good pair of goggles should be worn to protect the eyes when trimming trees. This is especially true if there is much wind. It's hard to move quickly and safely on a ladder, and you never know when a branch will blow into your face.

"Another thing that has caused irritation is getting sawdust in my eyes. Wearing goggles will also eliminate this trouble. I've found, too, that an ordinary pair of colored glasses will keep lime-sulphur out of the eyes when spraying. We should protect our eyes against sawdust, snapping branches, injurious chemicals, and bright sunlight."

OLD WATER PIPE USED FOR STRONGER GRAPE TRELLIS

I AM sending you some facts on my grape trellis which I strengthened with some old water pipe," writes W. J. Johnston of Illinois. "One-inch holes were bored in the end posts and through the intermediate posts. The pipe was run through these holes near the tops of the posts and then coupled up.

"The pipe acts as a spreader for the end posts. It is four feet from the ground and two number nine wires are strung below it in the usual fashion.

"The posts and pipe are painted white

\$1.00

EACH FOR YOUR
NEW IDEAS

Here, each month, growers get together to discuss experiences and ideas. The beginner as well as the veteran discovers many practical suggestions for better and more profitable fruit growing. You, too, have some experiences that will be helpful to fellow growers. Send them—briefly written on a penny card is satisfactory—to "ROUND TABLE EDITOR," AMERICAN FRUIT GROWER, 1370 Ontario St., Cleveland, Ohio. One dollar will be paid for each item published on this page.

METHOD DEVISED TO DO AWAY WITH BORERS

"I FIND that my method of control is better than digging borers out of trees with a knife or probing them with a wire."

When somebody comes along with a way to get rid of round and flat-headed apple tree borers, other than by the messy, tree-damaging cutting or probing systems, that's news. But before we give the story away, let's hear from Roy E. McMillin of Missouri, whose statement introduces this item.

"I take a little ball of absorbent cotton about the size of a match head or a little larger. The cotton is soaked in Black Leaf 40 and is pushed into the hole of the borer with a wire. I plug up the hole with moist dirt and forget it."

It's likely that those who have written the "Round Table" editor in the past about their troubles with the borers will try this method so they, too, can "forget it."

DECIDES ON SIMPLE DEVICE FOR REMOVAL OF PRUNINGS

FROM F. Pearson, a New Hampshire grower, comes word of his system for getting rid of pest-harboring cuttings.

"In cleaning up the orchard prunings in the spring, I have tried out several plans which include a burning device to be hauled around like a sled, and a large rake-like gatherer to drag behind the truck. My most satisfactory experience, however, has been with the method I now use.

"A low, long-bodied truck is loaded with the prunings by two men. The brush is heaped on two narrow boards (poles will do) placed on the truck bed. When full, the truck is driven to a fire pile or other dumping place. Then the ends of the boards or poles next to the cab are grasped and raised quickly and the brush dumped with speed and ease."

The photo below shows workers burning brush, a method of orchard clean-up formerly used by Mr. Pearson.



YOU CAN DEPEND ON YOUR HARDIE FOR CAPACITY AND PRESSURE

THE sprayer you buy should produce its rated capacity easily at slow speed, hour after hour, day after day, without excessive expense, loss of time or trouble. It does if you buy a Hardie.

Bear down on this matter of rating when you look at a sprayer. Demand evidence that the rating is for long, continuous runs, not demonstrations only. Big capacity and high pressure mean nothing unless they are available all the time the guns are turned on.

The superiority of the Hardie vertical-type, crankshaft-driven pump is easy to see and understand. The Hardie pump of any given rating is bigger and is more efficient than any other pump of equal catalog rating. You can depend on the bigger, stronger Hardie to do its work without faltering and without over-speeding.

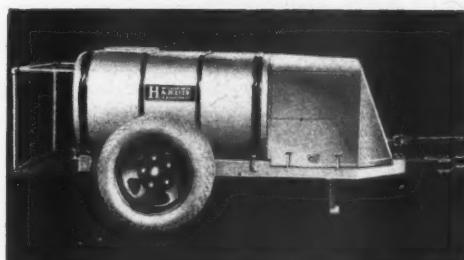
Hardie selective, clean oil lubrication reaches every moving part including plungers and plunger cups. Hardie alone gives you a completely lubricated pump.

Write for your copy of the 1939 Hardie Catalog and read how the Hardie is designed and built. Select your sprayer with confidence that you can depend on getting what you expect when you buy a Hardie.

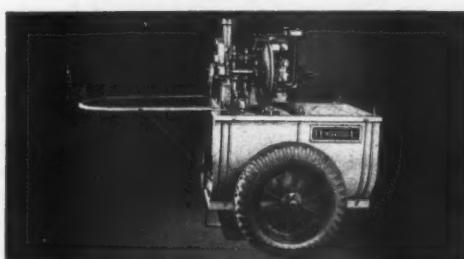
The Hardie Mfg. Company, Hudson, Michigan. Branch Factories, Sales and Service Offices: Portland, Ore., Los Angeles, Calif., Brockport, N.Y. Export Dept., Detroit, Mich.



Light draft is provided by roller bearing wheels on Hardie trucks. Pump and engine are fully protected by steel dustproof hood.



Hardie power transmission equipment on Tractor Trailers is ruggedly constructed, permanently lubricated and completely dust-proofed.



These lower-priced No. 99 Hardies are available in many models for fruit trees, gardens, small acreages of row crops, etc.

HARDIE

Dependable SPRAYERS

TWO BODY GUARDS

for every apple

DOWSPRAY DORMANT—"MIKE" SULFUR

DOWSPRAY* DORMANT gives you maximum control of aphid, bud moth, San José scale, scurfy scale, pear psylla and European red mite with a minimum of oil. The chemical used in DOWSPRAY DORMANT greatly increases the toxicity of the oil.

No other dormant spray is so economical. It is non-freezing, non-caustic and quickly emulsified. Use it for the best control of these orchard pests.

FOR BETTER FOLIAGE AND FINER FRUIT

Protection against apple scab demands complete coverage. "MIKE" SULFUR'S* microscopic fineness—more than 15 times finer than 325 mesh—gives even, thorough coverage. It sticks longer, even in rain when coarser materials quickly wash away.

"MIKE" SULFUR contains more than 95% active sulfur and is decidedly easier on foliage. It is non-caustic, does not interfere with food supply or normal leaf development. Tests show that trees sprayed with "MIKE" SULFUR have more abundant foliage and produce better grades of fruit.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

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Wider Effectiveness
Economical
Non-Freezing—Non-Irritating
Easy to Use—Less Oil per Tree

"MIKE" SULFUR

Better Coverage
Sticks Longer
No Injury to Foliage
Instantly Wettable
Stays in Suspension

THERE IS A
FOR EVERY PURPOSE



INSECTICIDE

*Trade Mark Reg. U.S. Pat. Off.